'Ever-Ready' 12 Bladed Safety Razor $1

The razor that has "made good" a million times

Photo of $1.00 Set with 12 Blades

We **guarantee** with a guarantee that returns you your money after trial—that the **new "Ever-Ready" 12 Bladed Dollar Safety Razor** will shave you best of **all** safety razors. This means $5.00 ones and it goes with lesser priced sorts without saying.

No other razor blade in existence is so capable of its shaving mission as the **Ever-Ready** blade and there are **twelve** (12) **Ever-Ready blades** in each set complete for **$1.00.** A Million **Ever-Ready** Safety Razors are giving that sought for, easy, safety shave to a million users. This proves conclusively the pre-eminence of the **dollar Ever-Ready** over high priced makes or poor imitations. Each **Ever-Ready** set is complete at $1.00, containing handsome safety frame, **12** intensely sharp **Ever-Ready** blades, handle and blade stropper all in compact case.

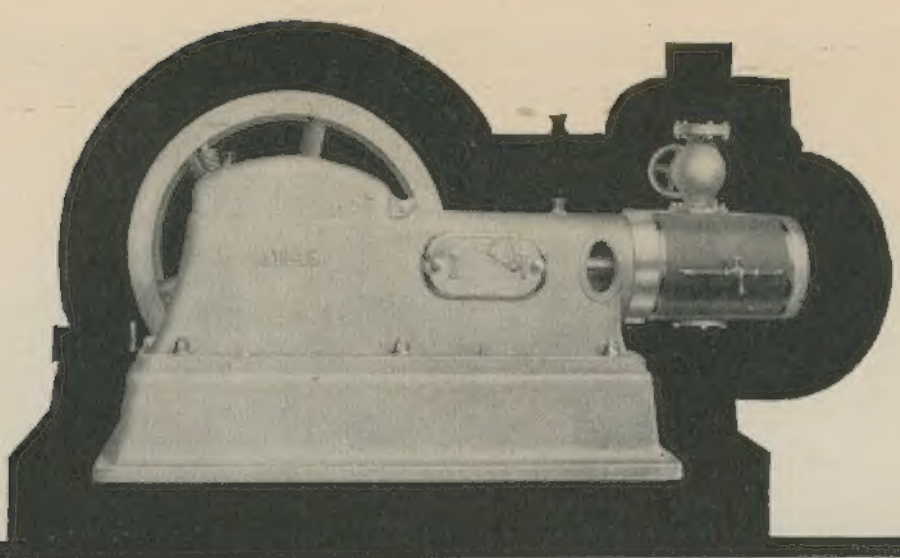
Extra "Ever-Ready" Blades 10 for 50c

You don't throw dull blades away—**Ever-Ready** blades are too good for that. You simply strop back the keen edge or exchange **10 dull blades for 10 new ones upon payment of 35 cents.** The **Ever-Ready** is least priced of all—the least priced to maintain and the finest ever.

"Ever-Ready" blades to fit "Yankee," "Star," and "Gem" frames or to add to your **"Ever-Ready"** set—**10 for 50 cents.**

Sold by **Hardware, Cutlery, Department Stores, Jewelers** and **Druggists** throughout America and the World. **Mail Orders prepaid upon receipt of $1.00.**

AMERICAN SAFETY RAZOR CO., Inc., *Makers* 320 Broadway, NEW YORK



FOR HIGH CLASS ELECTRIC WORK

The simple, clean, quiet running and economical

ATLAS SINGLE VALVE SPLASH OILING ENGINE

Knows no superior. IT is unexcelled in regulation and is especially designed for direct connection to generator. The great durability of the engine is easily understood when the liberal sizes of bearings, pins and other parts are compared with those of other makes.

ATLAS ENGINE WORKS

INDIANAPOLIS

BUILDERS OF

Steam Engines and Boilers of every description. Gas and Gasoline Engines. Over seven million horse power in service.

"DIRECT FROM WORKSHOP."

Baird-North Co.

PROVIDENCE, RHODE ISLAND.

Any Article will be sent Post Paid upon receipt of the List Price.

Solid Gold

559D Sapphire ring, 14K mount $4.00
708 E Ruby eyes, Diamond in mouth 10 K 10.00
Same in 14K " 12.00
819 E Signet ring, lily 10 K " 3.00
Monogram 50c extra.
A18 Odd Fellows pin .50
A22 Stock pin, plain .50
A24 Stock pin bead edge .50
A42 Neck chain, 18 in. 3.75
A43 14K Bead necklace 14 inches long 9.00
A47 Neck chain, 18 in. 2.00
A48 Neck chain, 18 in. 2.50
A49 Stock pin, pearl 1.00
A55 Brooch, baroques 2.25
A61 Brooch pearls, diamond centre " 8.50
A65 Signet scarf pin 1.00
Monogram 25c extra.
A66 Heart charm, diamond " " 1.00
A68 Brooch, heart " 1.00
A70 Locket, 2 pictures 3.50
Monogram 60c extra.
A74 Cuff links, scroll 2.00
A76 Handy pin, pearls 1.00
A81 Brooch, pearls " 4.50
A82 Masonic pin " 1.00
A83 Brooch, baroque 1.50
A85 Brooch, crescent 1.00

Gold Plate

A36 Brooch pearl " $0.35
A41 Neck chain, 15 in. .75
A45 Stock pin, pearl .25
A53 Brooch, maple leaf .25
A56 Brooch, hearts .25
A57 Brooch, owls " .35
A58 Hat pin " " .50
A77 Brooch, crescent .20
A78 Brooch, crescent .25
A79 Scarf pin, maple leaf " " .25
A80 Scarf pin, cupid .25
A86 Stock pin, plain .30

Sterling Silver

A15 Thimble, lily of the valley " $0.50
A35 Scarf pin, wishbone .20
A52 Brooch, red enamel .50
A63 Hat pin, gilt, blue enamel " " .50
A34 Scarf pin, ruby eyes .35
A94 Margaret tea spoon, ea. 85c; doz. 9.00

The catalog shows the complete Margaret pattern.

You should have a copy of our beautiful new Catalog. It will be ready for mailing November first. The book contains 160 pages, illustrating Diamonds, Fine Gold and Silver Jewelry, Rings, Watches, Toilet and Leather Goods, Table Ware, etc.

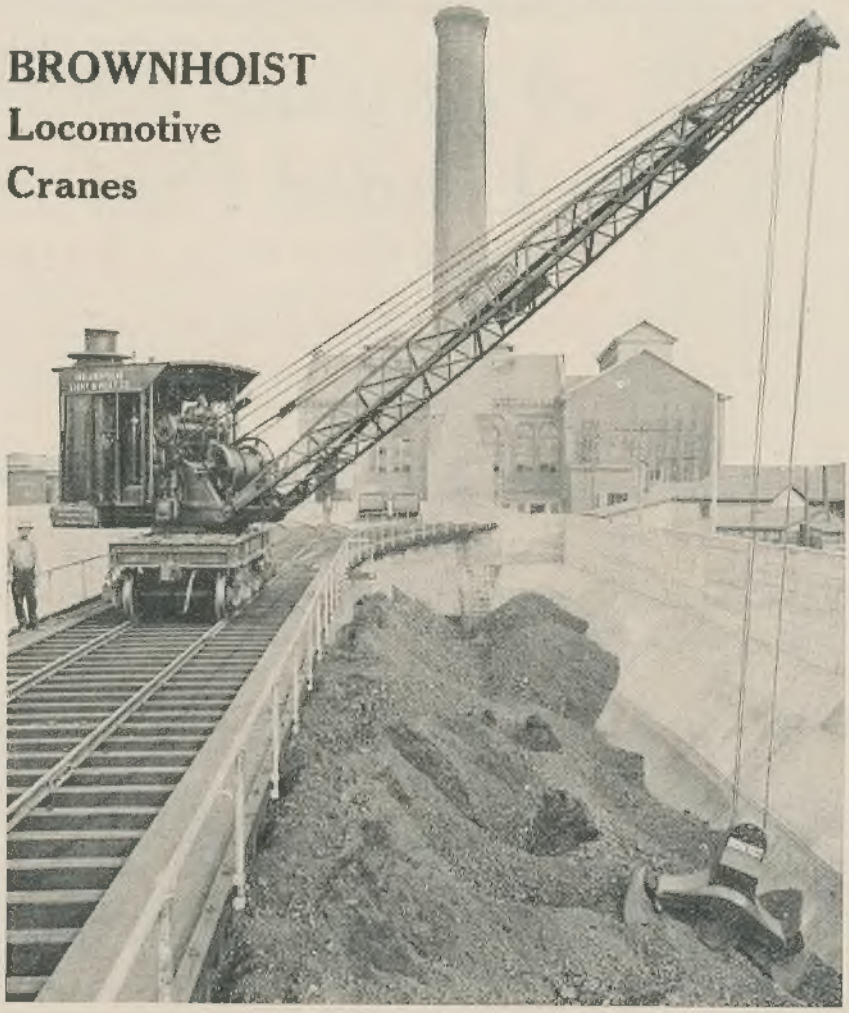
You will find our Catalog interesting; you will find our prices low, and the quality is fully guaranteed. Our "Direct from Workshop" plan will save you money—it will enable you to buy more and better holiday gifts.

We guarantee safe delivery and **we guarantee** to please you or to return your money. We have done this for eleven years **from our former location, Salem, Mass.** We have thousands of satisfied customers in every state and territory.

Send for the catalog. It tells all about our goods and our way of doing business. Write the note or post card NOW, while you have it in mind. Write it before you turn another page of this magazine and be sure of receiving the book.

Address, Baird-North Co., 939 Broad St., Providence, R. I.

BROWNHOIST
Locomotive Cranes



15-Ton Brownhoist Locomotive Crane with a 54 cu. ft. Brownhoist Grab Bucket handling coal in the 30,000 ton coal pit of the Indianapolis Light & Heat Co.

When you are buying a locomotive crane do not consider its first cost alone.

Investigate thoroughly and know absolutely what you are getting for your money. Learn its capacities, speeds, construction, weight, and its "standing" among locomotive crane users.

You can find Brownhoist Locomotive Cranes in all parts of the country doing various kinds of work. We can give you the names of our customers in your locality. Investigate!

Send for Catalogs I & K which show how and where these cranes are used.

THE BROWN HOISTING MACHINERY CO.
CLEVELAND, OHIO

HAMLEY'S CHRISTMAS TREE TOYS AND DECORATIONS.

Assortments of Decorations, Candle Clips, Fixers, and everything required for the full equipment of a Christmas Tree, at 5/6, 10/6, 21/-, and 42/-

Hamley's Toys

Everyone is invited to visit our **CHRISTMAS EXHIBITION.**

Thousand Pocket Christmas, Wonder Christmas Trees, and the largest and most perfect Collection of Toys in the world at **CASH PRICES.**

HAMLEY'S TOY CRACKERS.

Crackers containing Jewel Table Paperings, 1/-, 1/6, 2/-, 2/6, 3/6, 5/-, 7/6, 10/6, 15/-, 21/-, 31/6, 42/-, 52/6, 63/-, 105/-

Boxes of Special Crackers, filled with Toys for boys and girls, 5/-, 7/6, 10/6, 15/-, 21/-, 31/6, 42/-, 52/6, 63/-, 105/-

Top of Tree Crackers containing Toys, value 2/6, 3/6, 5/-, 6/6, 10/6, 15/-, 21/-, 31/6, 42/-, 52/6, 63/-, 105/-

Petite Revelry. A very pretty dressed Doll, with real hair, fitted basket, and complete set of Underclothing, 10/6, 12/6, 15/6, 21/-, 27/6

Model War Baby Doll, 17/6, 21/-, 25/-, 30/-, 50/-, 63/-, 5 Guineas.

Hamley's Latest Marvels. 5/6, 7/6, 10/6, 21/-

ALL ORDERS TO BE PREPAID.

WRITE FOR OUR GRAND ILLUSTRATED CATALOGUE OF CHRISTMAS TOYS AND NOVELTIES, POST FREE.

Treasures for Santa Claus.

COME AND SEE THEM!

Hamley's Latest Novelty and Success for the Xmas Festivities.

FATHER CHRISTMAS OUTFIT.

The mission of a long Coat, cowl or hood attached, trimmed with white fancy down, and a Father Christmas Mask, with flowing beard and hood, and a Basket for hanging up the Stocking over the Hearth, and filling with good things. This one outfit (or waste item as Father Christmas) is very smart, and a complete change from the ordinary costume.

Price, Complete, 21/-

Hamley's Celebrated Dressed Dolls, "Marionette."

20/-, 35/-, and 42/-

Also a large assortment of Fashion plates from 2/6, 3/6, 5/-, 7/6, 10/6, 15/-, 21/-, 31/6, 42/-, 52/6, 63/-, 105/-, 5 Guineas.

Hamley's Santa Claus Stockings, 1/-, 1/6, 2/-, 2/6, 3/6, 5/-, 7/6, 10/6.

Mechanical Pigeon Shy and Game, 21/-

DIABOLO.

The Pleasure for Christmas.

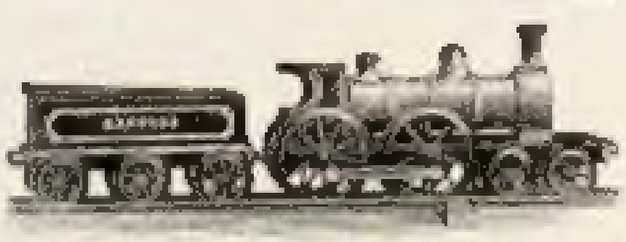
3/6, 5/-, 6/6, 7/6, 8/6, 10/6, 12/6, 15/-, 21/-, 25/-, 31/6, 42/-, 52/6, 63/-, 84/-, 105/-

WRITE FOR SPECIAL LIST.

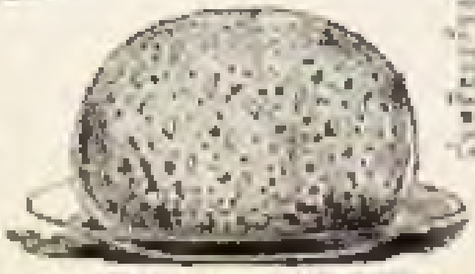
Hamley's Noted Shilling Toys.

Immense Selection.

The Latest Japanese Novelty. The Automatic Pierrot, a very clever little figure of Pierrot, which, when wound up, will walk, turn round, and bow, 2/6.



Fine Assorted Model Railways, consisting of Tank sets of Engine and Carriages with Rails, Tunnels, Trees, Posts, etc., from 5/- to 5 Guineas to 10 Guineas. Also Luggage Sets of Engine, Tender, Carriages, and Guard's Van, 5/6, 6/6, 7/6, 10/6 to 25/-



The Christmas Plum Pudding. When shaken it immediately snows on the plum, 2/6, postage 4d. extra.

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Importers and Manufacturers.

BANDS, MUSICIANS, CONJURERS, VENTRILOQUISTS, etc.

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35, New Oxford Street, W.C. (Dancing and Entertainments).

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PARIS AND NUREMBERG.

Painted by Harry Shaw Brown for Cream of Wheat Co

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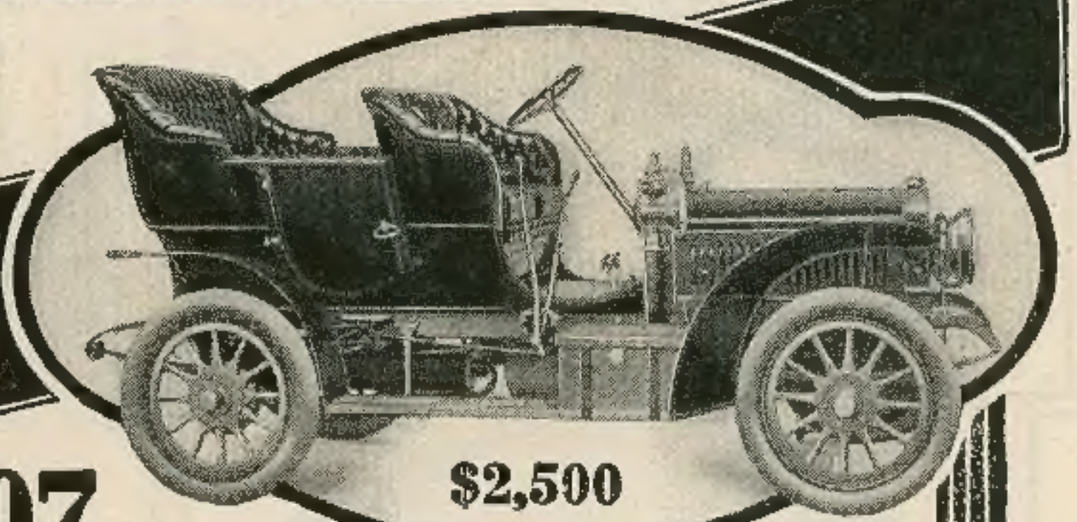
The Season's Ideal

CADILLAC 1907



$2,500

Nowhere in all automobile construction can there be found a more perfect combination of excellent features than in the four-cylinder Cadillac Model H for 1907.

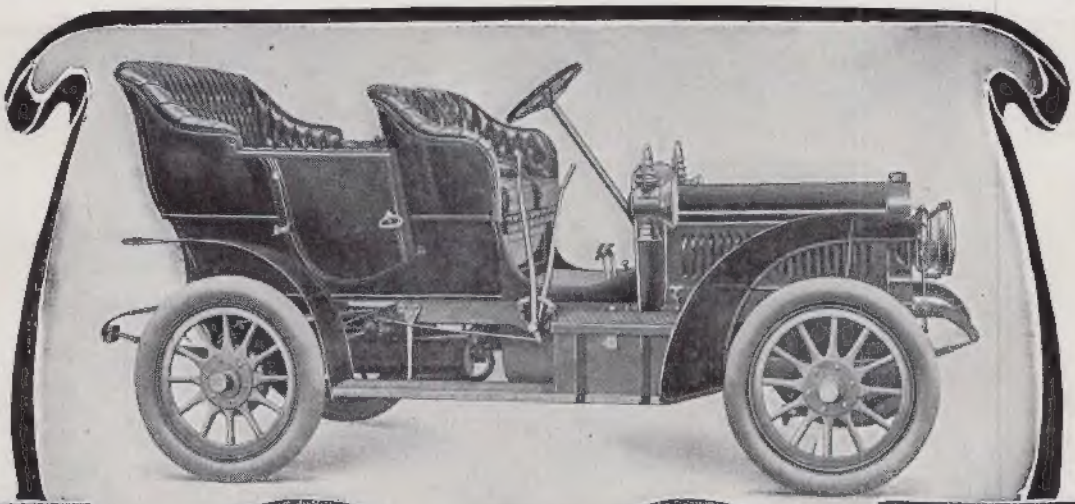
Whatever the point of view—whether it be its smooth and perfectly-balanced action, its ease of control, its comfort of riding, its finish and mechanical refinement, this new model is not excelled by the costliest types of either American or foreign manufacture. It is an embodiment of the many tried and true principles of the wonderful single-cylinder Cadillac, developed four-fold and perfected to the highest degree.

Greatly increased safety of riding is obtained through the new and exclusive double-acting steering gear; a new marine-type governor minimizes vibration and fuel consumption by regulating the speed of the engine under all conditions —these and many other superior features place the Cadillac in the front rank as a serviceable, economical, thoroughly dependable motor car.

Arrange for a demonstration with your nearest dealer—and let him show you why the eyes of the motor world are on this new Cadillac. **30 horse power; 50 miles an hour; $2,500.** Booklet A and dealer's address on request.

Other Cadillac Models are: Model K, Runabout, $750; Model M, Light, Touring Car, $950. All prices f. o. b. Detroit and do not include lamps.

CADILLAC MOTOR CAR COMPANY, Detroit, Mich. *Member A. L. A. M.*



1907 CADILLAC

Now Ready!

Cadillac supremacy once more asserts itself in the announcement that Model H, the final and perfected four-cylinder car for 1907, is ready for immediate delivery.

In improvement and mechanical finish this magnificent car out distances by at least two years any other car on the market. It has new features, but every one of them has been thoroughly tested and tried by months of severe service.

Its tremendous power makes it a veritable wonder in hill climbing; countless miles of travel over the roughest mountain roads in the country without balk or delay prove its never-failing dependability. *An automobile whose smooth and well-balanced action is almost marvelous when compared with what has heretofore been accepted as the highest type of motor car.*

Among the many features of the 1907 Cadillac are ease of control, due to our perfect planetary transmission; a marine type governor, regulating the speed of the engine under all conditions; a new and exclusive double-acting steering device that greatly increases safety; an independent steel engine suspension, which maintains perfect alignment of motor and transmission at all times, saving much strain and wear.

Model H is practically noiseless in operation; embodies the maximum of comfort in riding. **30 horse power;** capable of fifty miles an hour. Price, $2,500.

Enjoy a demonstration by your nearest dealer. His address and descriptive booklet "D" sent on request.

Other Cadillac models are: Model K, Runabout, $750; Model M, Light Touring Car, $950. All prices f. o. b. Detroit and do not include lamps.

CADILLAC MOTOR CAR COMPANY, Detroit, Mich.

Member Asso. Licensed Auto. Mfrs.

You needn't run to the tailor every time.

The Practical Trousers-Hanger and Press

keeps your trousers in shape and saves your money. It has no wire nor metal to mark, streak, or pull the trousers out of shape, but leaves them "smooth as if ironed." It saves its price many times over; saves time and trouble, and doubles your closet capacity. It is used by 250,000 good dressers and universally endorsed as "*The only one that really does the work.*"

Our Five-dollar Set contains 5 Trousers-Hangers and 3 Closet Rods. This number meets the average needs. Single Trousers-Hanger, $1.00. Single Closet Rod, 25c. All goods sent express prepaid.

Special Offer With first order only for one Trousers-Hanger we will include one Closet Rod free.

If not satisfied, **we refund your money** any time within 60 days, and goods are returnable at our expense.

Illustrated booklet free on request.

PRACTICAL NOVELTY CO., 425 WALNUT STREET, PHILA., PA.

CORRECT STROPPING

There's a knack in stropping a razor. It's clearly explained in our free catalogue. It will pay you to send for it and learn about

Torrey Strops

and how to use them.

A Torrey Strop costs 50c. to $2.50 and your money back if not satisfied. Sent, post paid, if not at dealers.

Torrey's **Oil-Edge** Dressing keeps any strop soft and pliable. 15c. or sent by mail upon receipt of price.

Torrey Razors are the finest razors made.

J. R. TORREY & CO.

Dept. h Worcester, Mass.

No Honing— No Grinding

RAZOR FLASHES
No. 2

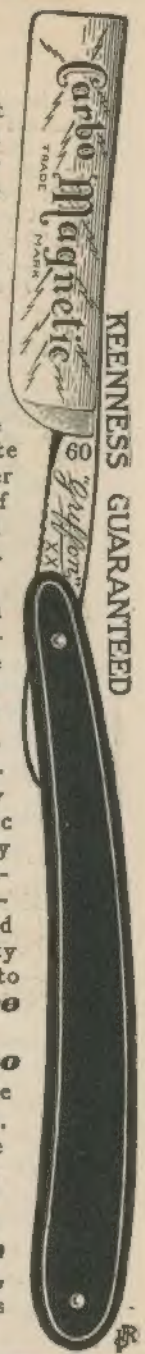
Steel is refined iron—iron without air, dirt or foreign substance—fused with carbon. Carbon gives toughness and strength—too much makes it brittle and worthless; too little, soft and pliable.

Steel varies according to the grade used, tempering and quality of labor employed. Unless you have devoted all your time to its manufacture you know the almost impossible task of judging the finished article. To break the article and examine the grain, hammer and file it to note the quality of labor, and other equally destructive tests is out of the question. There is but one real test for you—take it and try it for a period of time.

Cutlery steel—such as is used in making Carbo Magnetic razors—must be of the finest selected grade tempered uniformly throughout to a diamond-like hardness. Fire, with its varying temperature, will not do this.

Thirty years of most careful research and study have shown a way to add carbon to the Carbo Magnetic razor steel and merge it uniformly throughout the metal by a secret process of Electric Tempering. An exclusive and severe test of the finished blade results in an absolute uniformity in the line, and we are thus enabled to ***unconditionally guarantee*** every Carbo Magnetic razor used.

But test this ***no honing, no grinding*** razor in your own home—or have your barber use it on you. Send us your dealer's name, tell if he handles the Carbo Magnetic razor, and we will mail you our new proposition for testing these razors ***without obligation on your part to purchase,*** together with our free booklet "Hints on Shaving."



HOLLOW GROUND AS ILLUSTRATED $2.50 DOUBLE CONCAVE FOR HEAVY BEARDS $3.00	THE Carbo Magnetic RAZOR	SET OF TWO IN LEATHER CASE $5.50 CARBO MAGNETIC STROP $1.00

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A. L. SILBERSTEIN, 461-463 Broadway, New York

Chiclets

OF course Chiclets are popular! The delicious chewing gum in its dainty candy covering and the six drops of pungent peppermint which flavor it, are the very good reasons why you will be benefited no less than you will be pleased if you buy a 5c or 10c packet of CHICLETS to-day. Should your druggist or confectioner not sell Chiclets now send us a dime for a sample and a booklet.

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Buffalo Lithia Water

Has for Thirty Years been Recognized by the Medical Profession as an Invaluable Remedy in Bright's Disease, Albuminuria of Pregnancy, Renal Calculi, Gout, Rheumatism and all Diseases Dependent upon a Uric Acid Diathesis. Time adds to the Voluminous Testimony of Leading Clinical Observers.

Dr. John V. Shoemaker, M. D., LL. D., *Professor of Materia Medica and Therapeutics in the Medico-Chirurgical College of Philadelphia.* See *Medical Bulletin*, July, 1902. Gives full clinical notes of nine cases of **Albuminuria of Pregnancy** and three cases of **Puerperal Convulsions** in which **BUFFALO LITHIA WATER** was systematically used with gratifying results, and adds: "The habitual use of **BUFFALO LITHIA WATER** by women who are enceinte is a commendable precaution against the occurrence of **Puerperal Convulsions.**"

Dr. Cyrus Edson, A. M., M. D., *Health Commissioner, New York City and State, President Board of Pharmacy, New York City, Examining Physician, Corporation Council, New York City, Etc., writes:* "I have prescribed **BUFFALO LITHIA WATER** with great benefit in **Bright's Disease.**"

Medical testimony of the highest order, attesting the value of this water in the other diseases mentioned, mailed to any address. For sale by grocers and druggists generally.

PROPRIETOR BUFFALO LITHIA SPRINGS, Virginia.

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President of this bank, as an earnest worker for the interests of the whole people is world-wide. Few men are better known and the efforts of none are more appreciated. In organizing this bank we enlisted the personal and financial co-operation of Mr. Johnson upon the understanding that it should be a bank for "the people" rather than for the benefit of a few capitalists.

It is particularly gratifying that we are able to present our

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the most perfect method ever devised for handling accounts from depositors anywhere in the world. When you send money to us for deposit, we issue to you, instead of the old, clumsy "pass-book," with its dangerous and inconvenient features, our Bank Money Orders. They show, on their face, the amount of principal and interest—you know what it is at a glance, without figuring. They are Certified Checks on this Bank, the safest known form of commercial paper. You keep them and when you need money,

YOU CAN HAVE THESE BANK MONEY ORDERS CASHED INSTANTLY—ANYWHERE

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Write for booklet "A" today, or send us your deposit and we will at once mail you **Bank Money Orders** for the full amount. The Booklet is free—write for it now.

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TOM L. JOHNSON, President
Cleveland, Ohio

Look for name "Congress" on every box.

Guests **must** play with soiled cards if nothing better is provided. They can **say** nothing, but will think a lot.

By using a new pack of

Congress Cards

Gold edges

the game will be **so** enjoyable for everybody.

Smooth and fine as polished ivory. Picture backs, exquisite in coloring Sold by dealers, 50c. per pack.

Send 2c. stamp for rules of new fascinating game of Quinto—four-handed. 175-page book of rules of all card games for 10c. stamps, or 3 green stamps from Congress transparent wrappers.

A beautiful enlargement of George or Martha Washington, Rose or Colonial Girl back, 14 x 21, in colors, for framing, sent postpaid, for 3 green stamps from Congress wrappers; or the set of four for 12 stamps.

The U. S. Playing Card Co.,
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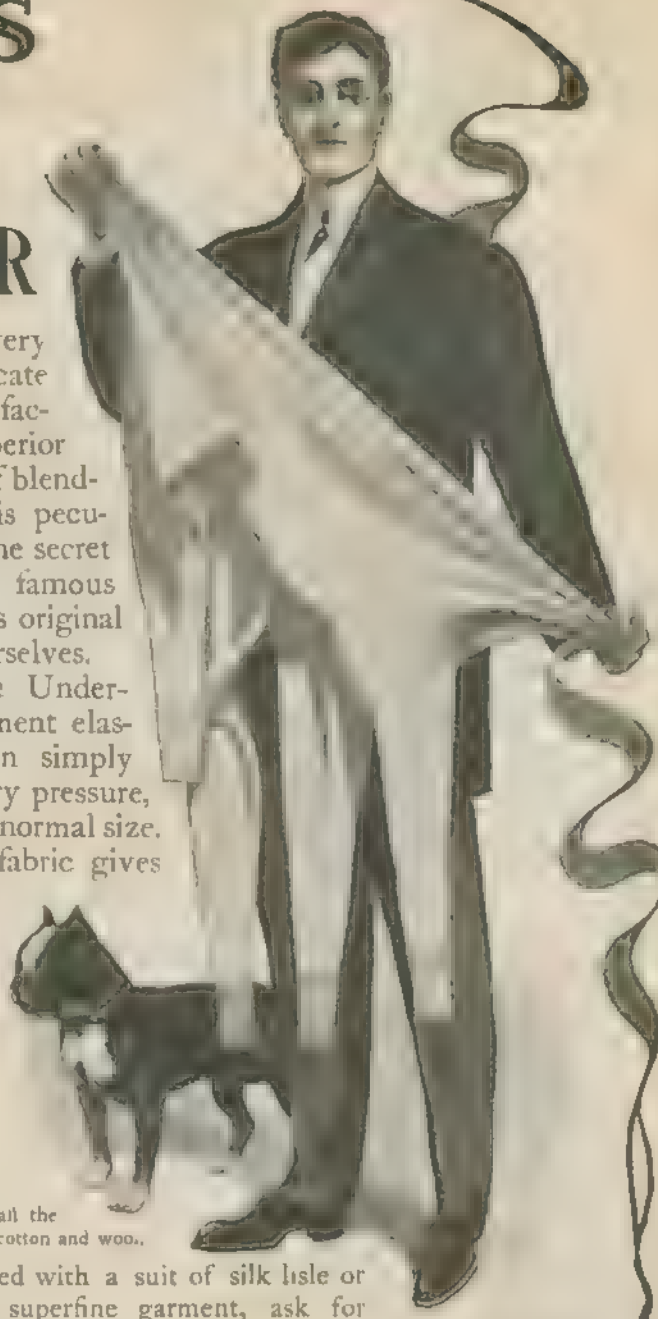
COOPER'S
Spring Needle
UNDERWEAR



is an original underwear in every sense of the word. The delicate machinery used in its manufacture is different from and superior to any other. The manner of blending the exclusive materials is peculiar to the Cooper plant. The secret method of weaving the famous **SPRING NEEDLE** fabric is original with and known only to ourselves.

Cooper's Spring Needle Underwear has a peculiar, permanent elasticity. It does more than simply "stretch"—it yields to every pressure, yet returns automatically to normal size. The **SPRING NEEDLE** fabric gives Cooper's Underwear (and no other) "*the stretch that goes back.*"

You should buy and wear Cooper's for it alone will give you absolute comfort and satisfaction. It is the underwear of character and quality.

Made in Union and two-piece suits, in all the various sizes, weights and colors—silk lisle, cotton and wool.

You will be particularly pleased with a suit of silk lisle or wool. If you want an extra superfine garment, ask for Cooper's *Grade de Luxe* Underwear.

For sale by best dealers. Send for booklet.

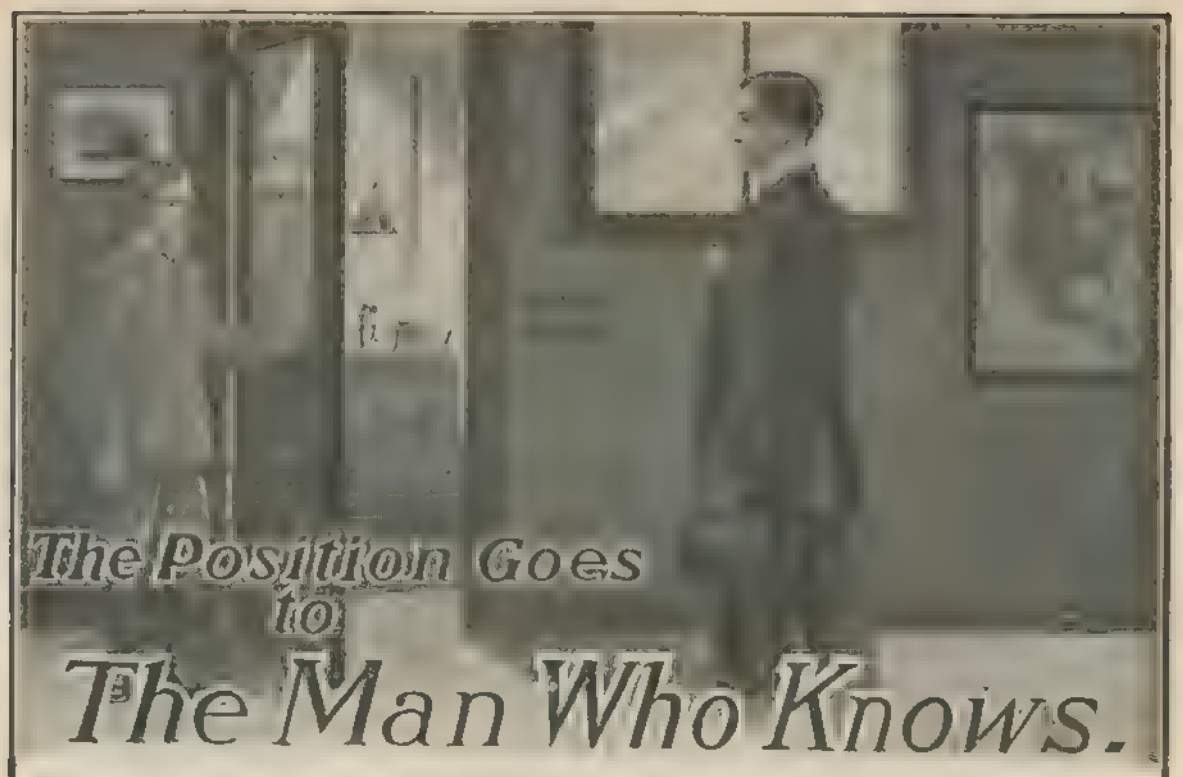
Every genuine Cooper garment bears this **TRADE MARK**

COOPER'S DERBY RIBBED UNDERWEAR

Manufactured by

Cooper Manufacturing Company

BENNINGTON, VT.



The Position Goes to The Man Who Knows.

The preliminary interview that the employer has with every applicant for a position consists mostly of questions which the applicant is required to answer. This is just as true with the private business house or corporation as it is in the civil service. The man who can answer these questions clearly, correctly and decisively is the man who gets the place. Guesses, suppositions and imaginings won't do—only facts have a cash value—and the position goes to the man who *knows*. The man who knows, and knows that he knows, get his information from

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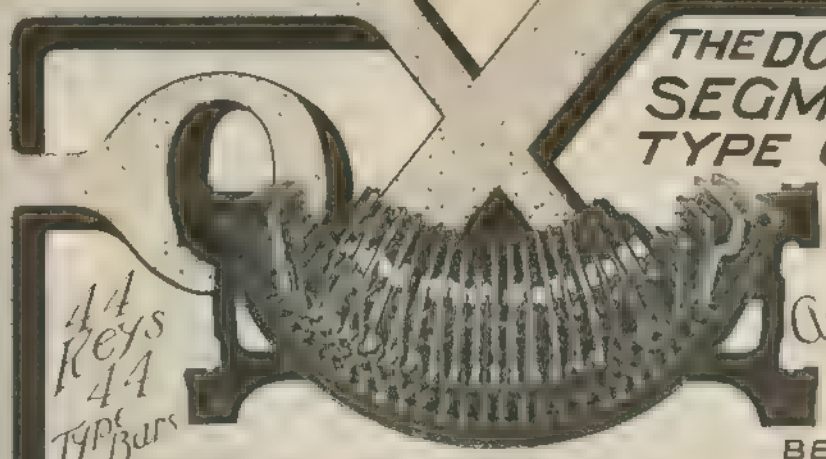

THE DOUBLE SEGMENT TYPE GATE
44 Keys 44 Type Bars
16½ inch Assembling Surface
AND THE RESULT
BEARING SURFACE 12 TIMES THE ORDINARY

The Fox Has Established the Durability of the Visible Typewriter

A Typewriter Is No More Durable Than Its Typebar

The double segment type gate in the Fox shown in upper illustration, enables us to use the wide typebar bearing and the heavy typebar shown in lower illustration. The typebar is that part of a typewriter that holds the type and that strikes the printing point when a key is depressed. It is at the bearing point where the bar swings, that nine-tenths of the wear on a typewriter occurs.

On The Fox this Bearing is Adjustable, and is wide so that when wear does occur and the type get out of alignment it can be instantly "taken up" and the alignment corrected

This Feature Alone Lengthens the Life of a Machine by Years

It is Exclusive in the Fox Typewriter

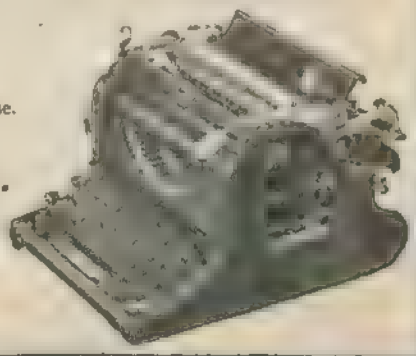
¶ On machines where the bar is light weight and bearing narrow, there is no method of adjustment and although they may do beautiful work when new, they will not continue to do it.

Another Exclusive Feature is the Interchangeable Carriage

¶ Five carriages of different lengths can be used on any Fox Typewriter, and are instantly interchangeable. ¶ The advantages secured by purchasing a Fox are not even attempted by competitors.

We Place The Fox on Free Trial

¶ Let us demonstrate it in your office at our expense.
¶ A complete descriptive catalog mailed on request.



FOX TYPEWRITER CO.

209 FRONT STREET

GRAND RAPIDS

MICHIGAN

ADV. NO 505

"GEM" JUNIOR Safety Razor

See THE "BAR-JAR" BAR

The Greatest of all Safety Razor Improvements. A bar that prevents the jar—or resistance of the beard. It smoothens, and tightens the skin correctly at the shaving edge, adding a delightful massage effect, and renders shaving a pleasurable experience. It makes the "Gem" Junior *perfection*, yet does not add a cent to its price.

The **"Gem"** Junior has *always* been *first*, on account of the superior excellence of its work, the simplicity of its parts and its lasting quality. Ready for use at any moment, and a positive guarantee always of a clean, close, comfortable, safe shave. A daily saving of Time, Temper, Torture and Tips

Set Complete, 7 blades $1.00

including silver nickel plated frame and shaving and stropping handle in handsome plush lined case. Special set, 12 blades $1.50.

The "Gem" Junior Blade that is the real secret of the success of the **"Gem"** Junior—they cost more to produce than the indifferent kind, and one **"Gem"** Junior blade will usually outlast 12 of the others. The 7 blades will give 100 or more perfect shaves; when dull send them to us with 25c. and we will mail 7 brand new ones postpaid. Or, ASK YOUR DEALER. *The Storiette, "The Gentle Art of Self Shaving," including a full course of shaving instruction, sent Free.*

GEM CUTLERY CO., 34 Reade Street, New York

(Thirty years in business—the original Safety Razor Makers.

NO MONEY DOWN

MEN'S SUITS ON CREDIT

$1.00 A WEEK

Buy Men's Suits, Overcoats and Raincoats direct from our factory by mail

For $15 & $18

We require no security and we trust any honest person anywhere in the United States.

We send garments on approval—you don't pay a penny 'till you get the clothes and find them satisfactory—then pay $1.00 a week.

We are the pioneers and twice over the largest Credit Clothiers in the world. We operate 73 stores in the principal cities of the United States and have over 500,000 customers on our books.

FREE Send today for our fine line of Fall and Winter samples. Self measurement blank, tape and full particulars of our convenient payment plan—all free to you.

Commercial rating $1,000,000.

Menter & Rosenbloom Co.

275 St. Paul Street Rochester, N. Y.

Get the Genuine

Look for the *Shur-On* tag to make sure of *Shur-On* quality—firm hold, neat appearance, perfect comfort, strong construction—and be protected by our guarantee.

Backed by 43 years' reputation that we can't afford to trifle with. Any broken part of **mountings replaced free** within one year, by any optician in the United States.

Shapes to fit any nose.

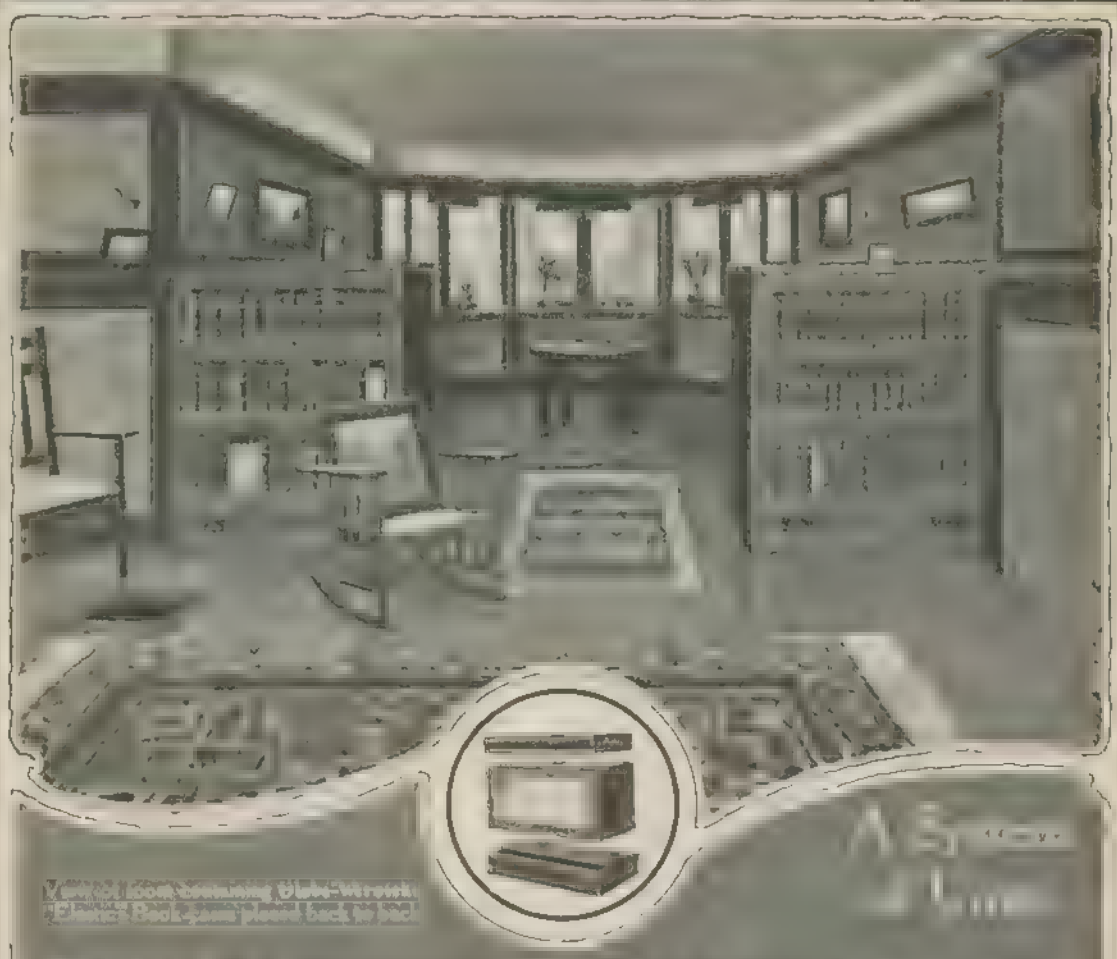
Ask your optician. Book free

E. Kirstein Sons Co., Dept. S,

Established 1864 Rochester, N. Y.

Shur-On Eye-glasses

Globe-Wernicke "Elastic" Bookcases



This is apparent not only in the mechanical construction by which it becomes possible to arrange a library like that shown in the illustration, but it is also manifested in the distinct

We have about 1,500 agents who carry **Globe-Wernicke** Book-cases in stock.

He will show you eight different finishes of quartered oak and mahogany, dull or polished; explain how easy it is to fit most any space in any room by the use of our full and

Hail the Quaker!
Quaker Oats
Quaker Oats, the best and most generally eaten oatmeal in the world, established a standard of perfection in foods; the Quaker quality standard. It is sold at the same price as the inferior brands. Large package 10 cents.
Quaker Rice
(Puffed)
Quaker Rice is an ideal, ready-to-eat breakfast food. It is selected rice, perfectly cooked and nicely browned. Very strengthening and delicious to the taste and—what means most—it is Quaker Quality. 10 cents a package.
Quaker Corn Meal
Unless you've eaten Quaker Corn Meal you don't know the great superiority of one kind over another. The eye sees the difference; and the palate and digestion call for Quaker Corn Meal after the first time. 3 lb. packages 10 cents.
(Not effective in extreme South and far West)
The Quaker Oats Company

Quaker Oats

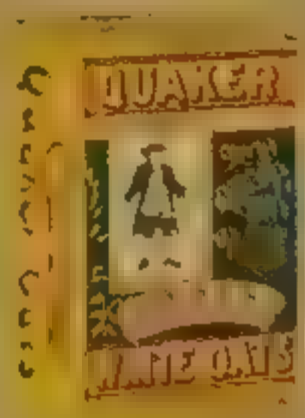
When you eat rolled oats, be sure it is Quaker Oats. There is a delicacy of flavor—a delicious goodness—about Quaker Oats that you do not find in any other kind. The reason is simple.

Quaker Oats

is made by a process that has taken years to perfect. It is the quality of the white oats used and the completeness of the process of manufacture, that gives this distinctly different flavor to Quaker Oats. The surest proof of the superior goodness of Quaker Oats is for you to order a package today and try it yourself. The proof is in the eating.

At grocers everywhere. Large package 10c

Made by The Quaker Oats Company,
Chicago, U. S. A.



COUNTRY LIFE

DINING IN THE RESTAURANT AT THE HYDE PARK HOTEL.

[illegible] Suites unsurpassed in Luxurious Equipment, every Suite having its own Private [illegible]

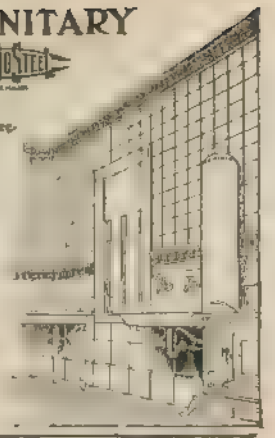
"AN IDEAL FAMILY HOTEL."

THE HOUSE BEAUTIFUL — THE HOUSE SANITARY

Your Guide

Is what tiling really means. The tiled **BATHROOM and KITCHEN** is the desire of every householder.

Our Guarantee



NO-CO-DO STEEL TILING

puts it within the reach of all. For a few dollars you can completely transform your Bathroom, Kitchen, or Laundry into the most modern tiled effect. It has every advantage over all other kinds of tiling—is the most sanitary, durable, and economical material on the market. Easily and quickly applied by **ANY MECHANIC.** Write for prices and booklet.

We also manufacture

NORTHROP STEEL CEILINGS and WALLS

Catalogue furnished on request.

NORTHROP, COBURN & DODGE CO.

33 Cherry St., New York City

TOOLS

Outfit No. 47 "

FINE POLISHED OAK CABINETS

and the same shape, size and quality of Tools that we have sold in our store to mechanics since 1848. Absolutely the best

Outfit	No.	47–21	Tools,	$7.50
"	"	52 24	"	10.00
"	"	53 36	"	15.00
"	"	54 40	"	20.00
"	"	100 96	"	85.00

Further details in Catalogue No. 2350.

(Automobilists should send for Circular No. 2300 of the "TOURIST ASSORTMENT.")

Hammacher, Schlemmer & Co.

Hardware, Tools and Supplies,
New York, Since 1848. 4th Ave. & 13th St.

PAINTS ENAMELS
THE ACME QUALITY KIND
STAINS VARNISHES

Identifies Perfect Paint

This "Acme Quality" mark everywhere identifies the Perfect Paints for Every Purpose. Be sure it is on the label of paints, enamels, stains, varnishes—*everything that goes on with a brush*—and your paint supplies will be the very best. "The Selection and Use of Paints and Finishes" explains and illustrates how to correctly finish anything. A remarkable book, *valuable to you*, free on request.

Dept. C

Acme White Lead and Color Works

Detroit, Mich.

Hartshorn Shade Rollers

Wood Rollers

Bear the script name of Stewart Hartshorn on label.
Get "Improved," no tacks required.

Tin Rollers

Stewart Hartshorn

The One Who Lights Up

SUN
INCANDESCENT

Delights everyone. Surpasses gas, electricity, kerosene in purity of light and wonderful economy.

GASOLINE
LAMP

Beautiful fixtures, brackets, chandeliers, pendants to fit lamps. Agents get catalog and terms. THE "SUN" OUTSHINES THEM ALL

The One Who "Pays Down"

SUN VAPOR LIGHT CO., 221 Market Street, Canton, O.

HASTINGS TABLES
—PEDESTAL DINING—
ARE FITTED WITH THE
TYDEN LOCK

A table fitted with a Tyden Lock

Without a Tyden Lock

The Table You Buy

SHOULD BE A HASTINGS TABLE FITTED WITH A TYDEN LOCK, BECAUSE IT WILL ALWAYS GIVE YOU COMPLETE SATISFACTION.

If a pedestal dining table is not fitted with a Tyden Lock it will spread apart at the bottom, sag at the top, and in time the table will be ruined. This cannot happen if the two parts of the table are locked together **inside of the pedestal,** midway between the top and bottom (like a door), which pulls both the top and bottom together tight.

The Tyden Lock is the **only one** that locks a table in this way. No other can possibly do it, and as you only buy one or two dining tables in a lifetime, be sure you get one that will remain satisfactory **all the time.**

We would like to refer you to any of the 60,000 satisfied users of Hastings Tables, fitted with a Tyden Lock, all sold them during the last six years.

Write for illustrated booklet showing the latest designs in pedestal dining tables (all prices, all woods), and proofs why the Tyden Lock is the only one that will satisfy you

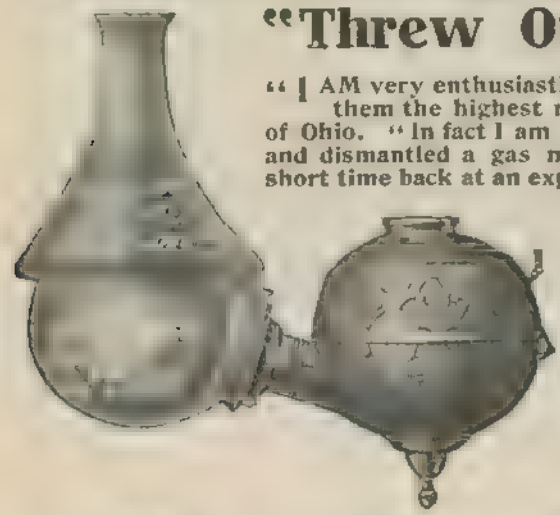
Sold by leading furniture dealers.

HASTINGS TABLE CO.

Dept. Q **HASTINGS, MICH.**

"Threw Out a Gas Machine"

"I AM very enthusiastic over The Angle Lamps, and can certainly give them the highest recommendation," writes Mr. George G. Brown of Ohio. "In fact I am so well pleased with the lamps, I have taken out and dismantled a gas machine which I put in for lighting purposes a short time back at an expense of several hundred dollars."



There, reader, is a little food for thought on the lighting question for *you*. It is easy enough to *claim* safety, perfect service, economy, but proving it is another matter. The trouble with the gas machine is that when it fails to make good, it is your money that is lost; the manufacturer takes no responsibility. Mr. Brown has had his gas machine experience at the cost of several hundred dollars. Now this machine is a full charter member of the "Down and Out Club," along with his money. Now he is using The Angle Lamp and finds it far superior.

Don't such facts make you curious to know more about this new kind of oil burning lamp which so many particular people are using in preference even to gas and electricity? Then ask us for free catalogue "32." Let us explain the working of this new device.

The "1908" Improved Angle Lamp

is no ordinary lamp, understand. It is not a mere improvement on the old style lamp. It is an entire departure from old style methods. In its construction the forced draught "chimney principle" of air supply which for so long has made oil burning devices smoke, smelly and troublesome, has been replaced with a method which gives perfect combustion. The result is a lamp as clear and convenient to operate as gas and of such splendid lighting power that even such people as Ex-Pres. Cleveland, the Rockefellers, Carnegies, etc., use it for lighting their estates in preference to all other systems. But write for our Catalogue "32" giving full information and our proposition for

30 DAYS' TRIAL.

Wouldn't you like to have your home admiringly referred to by your neighbors as "the best lighted house in the country"—if you knew such a home could cost so much less than your present system as to pay for itself in a few months' use? Then write for Catalogue "32" describing The Angle Lamp fully and listing 32 varieties from $6.00 up. It is free for the asking. 1908 improved models now ready.

ANGLE MFG. CO. - Angle Bldg., 159-161 West 24th Street, NEW YORK

Hotel Plaza, New York City

HUNT

Coal and Ash Handling Equipment in Hotel Plaza

IN this magnificent hotel, coal and ashes are handled by a Hunt Pivoted Bucket Conveyor and a Hunt Industrial Railway.

If interested in the economical handling of coal; ask for Catalog G12-9.

HUNT APPARATUS

Used in this fine Depot.

IN the new Union Depot at Washington, D. C., coal and ashes are automatically handled by a Hunt Pivoted Bucket Conveyor. A Hunt Coal Cracker provides coal of just the right size to suit the boilers

ASK for a copy of our Catalog G12-9 Hunt Coal and Ore Handling Machinery and find out the saving effected by this machinery.

C. W. HUNT CO., INC.

WEST NEW BRIGHTON, N. Y.

Designers and Manufacturers of Apparatus for the Automatic Handling of Bulk Material

The Best Dish in the Cook Book

Cream of Wheat

THE BLOCKS TELL THE STORY.

THE MASTER CRITIC

What shall the Harvest be?
CREAM of WHEAT

Hammer the Hammer

We were the first to make a revolver absolutely safe from accidental discharge. Now we have competition with "near-safe" revolvers. But the imitations are merely devices *added* to some previously existing firing mechanism. You have to *press* or *push* or *pull* something before the pistol can be fired at all.

Our device is *the mechanism itself.* You just pull the trigger and everything else follows.

Our advertising may be copied and infringed, but our patent safety lever cannot be touched by the imitators.

The Iver Johnson Revolver puts a shot right where you aim it. But it *never* shoots until you want it to. It can't. You may "*hammer the hammer,*" drop it, kick it, anything you like, but you can't discharge it *until* you pull the trigger. It's as handsome as it is business-like.

Our Free Booklet, "Shots"

tells all about the peculiar construction of Iver Johnson Revolvers. With it comes our large, handsomely illustrated catalogue.

Iver Johnson Safety Hammer Revolver
3-inch barrel, nickel plated finish, 22 rim-fire cartridge, 32 or 38 center fire cartridge, - - - - - - - - - **$6.00**

Iver Johnson Safety Hammerless Revolver
3-inch barrel, nickel-plated finish, 32 or 38 center-fire cartridge - - - - - - - - - - - - - - - **$7.00**

Hardware and Sporting Goods dealers everywhere will be glad to explain the safety features of Iver Johnson Revolvers. If you have any difficulty in getting them, write us and we will see that you get one. Look for the owl's head on grip and our name on barrel are marks of the GENUINE

Iver Johnson's Arms & Cycle Works
130 River Street, Fitchburg, Mass.
New York, 99 Chambers Street
Pacific Coast, 311 Park st., Alameda, Ca.
Hamburg, Pickhuben 4
London, 13 Mark Lane, E. C.

Makers of Iver Johnson Single Barrel Shotguns and Iver Johnson Truss Bridge Bicycles.

Hammer the Hammer
Accidental Discharge Impossible
Look for owl's head on grip and our name on barrel.
TRADE MARK
IVER JOHNSON

IVER JOHNSON
AUTOMATIC SAFETY REVOLVER

And then again, when snow and ice hold all outdoors

KODAK

Turn the lens into the home and picture, for the days to come, its hearthstone harmonies. The album of baby and the pictures made by the little folks will be held more precious every year

And picture making is easy now—the Kodak has made it so. No dark room, few chemicals, no fuss. It's photography with the bother left out

BROWNIE CAMERAS, they work like Kodaks

EASTMAN KODAK CO.

Rochester, N. Y.

GIVE Suspenders & Garters - for CHRISTMAS

Christmas Combination Boxes

Ball Bearing Garters

With a beautifully decorated cover in colors, a Christmas Combination Box containing a pair of President Suspenders and a pair of Ball Bearing Garters makes a present fit for any man.

President Suspenders and Ball Bearing Garters are the kinds worn by most men. They are recognized as the right kinds. So when giving them you can rest satisfied that you have selected the easiest, most comfortable and most durable suspenders and garters.

You will find nothing else so satisfactory, so prettily boxed, for so little money.

If your home stores have no Christmas COMBINATION BOXES buy of us by mail. We will send this Christmas Combination Box of suspenders and garters postpaid, for 75 cents.

If you want President Suspenders alone (no garters) in a Christmas box, the price is 50 cents.

THE C. A. EDGARTON MFG. CO., 503 Main St., Shirley, Mass.

1908 Calendar and three PHILIP BOILEAU Panel Pictures for 25 cents

The President Calendar for 1908 marks our best [illegible] distinguishing feature being three delightfully modish American women—painted by Philip Boileau.

Each of the three subjects is in the most fetching style of that most charming of artists, to portray the American femininity, in its most attractive form.

The natural floral decoration on each is the queen Rose, so unalterably associated with affection—one with the rich, red American Beauty, another the pink, delicate Bridesmaid, and the third the glorious yellow de Dijon. The whole Calendar is a work of art, fragrant with suggestion, yet marking the lapse of Time. There are four parts. No printing on the pictures. The 1908 Calendar in full is on a separate sheet. All four, the three pictures and the Calendar, are done in twelve colors on heavy, highly finished plate card, 8¼ x 15 inches, making very attractive panels for framing, or they may be grouped and arranged artistically without frames. To be sure of a President Calendar, order early. The entire set—4 parts—mailed postpaid for 25c. **Now Ready.**

DIAMOND GIFTS

"Good form" is usually just good taste reduced to a formula. In the matter of hats the formula is simple: get a becoming hat; get a hat in the current fashion; avoid vulgar extremes. The

KNOX
HAT

has been known for nearly three score and ten years as a hat which invariably fulfills these requirements and in addition commends itself to the economical on account of its service and durability.

Beauty For The Boudoir

Let the Christmas thought lead you to the store which sells Libbey Cut Glass—"the world's best."

Beauty for the boudoir? Yes, and exquisite beauty and service too, for dining-room and drawing-room as well.

A hundred satisfying answers to the Christmas question, wherever Libbey is sold.

But be sure the name Libbey is 'graven in the glass.

THE LIBBEY GLASS COMPANY, Toledo, O.

THE AMERICAN MAGAZINE stands back of its advertisers, though not one of them needs it.

MELLIN'S FOOD

for the BABY

Idella May Moon, Norman, Tenn., A Mellin's Food Baby

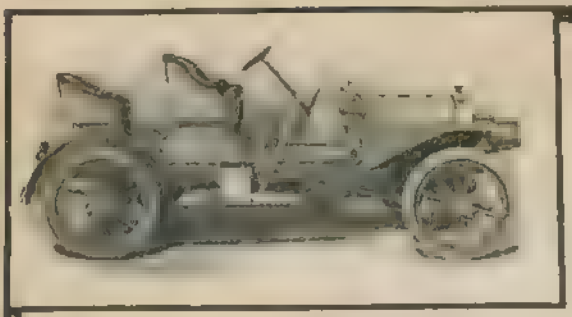
A discouraged young mother wrote to us the other day and asked, if we really believed Mellin's Food would help her baby. She said that she had already tried many different foods and methods, and baby was steadily growing worse.

We told her that we felt sure that Mellin's Food would help her baby, and we sent her a Sample Bottle of Mellin's Food and our beautiful book, "The Care & Feeding of Infants." We also told her just how to prepare the first few feedings of Mellin's Food and how to continue.

Now she writes that baby is doing splendidly. He gains steadily, is happy all day long and things couldn't be better.

How about your little one? Let us send a Sample Bottle of Mellin's Food and the Book to you. Both are FREE. We know you ought to have them.

Mellin's Food Company, **Boston, Mass.**



The World's Record Sealed Bonnet Hero

Mora

MECHANICALLY RIGHT

¶ Wheel base, 98 inches; weight, 1750 pounds; 24 horse power, La Coste magneto. Price, $2300.

Has run over 6000 miles with Bonnet sealed, and without repairs to Power Plant

¶ **You win** if before purchase you examine mechanical construction

¶ **You lose** if you decide on purchase from exterior appearance alone.

¶ **The Sealed Bonnet** tells the world's record of strenuous reliability only possible through mechanical perfection. It's free for the asking; it's worth consideration.

Have you heard of the

Mora Tourer six *Mora Racytype six*

Reliability unquestionable. Highest power in proportion to weight of any (bar none). Material and workmanship unsurpassable. Investigate.

See it; Sec. D., A. C. A. Show, New York, October 24th to 31st.

Mora Motor Car Company

1 Mora Place

Newark, New York, U. S. A.

$250 Success Automobile

The Original Auto-Buggy

A light strong steel tired Auto-Buggy, S able for city or country use. Speed from 4 to 20 miles an hour. Invented and patented by an Engineer after 12 years' Auto experience. Our 5 Model has an extra power engine, Timken roller-bearing axles, price, $255. Also 10 h. p. $400. Rubber Tires, $25 extra. Write for descriptive literature.

Success Auto-Buggy Mfg. Co., Inc., St. Louis, Mo.

RIDE IN *Glide*

Model G Glide

and speed, but 1000 inches of braking surface make the Glide

THE CAR OF CONTROL

The ideal family touring car. Seats 5 to 7. Famous Rutenber motor. 40 H. P. 120-inch wheel base. High Road Clearance. Write for handsomely illus. catalog. THE BARTHOLOMEW CO., 309 Glide St., Peoria, Ill.

1908 MODEL

VICTOR HAND-FORGED

Water cooled engine; wheels 37 inches, 1 1/4 inch solid rubber tires; speed from 1 to 25 miles per hour. No country too rough for the **Hand-Forged Victor**. Price $450.00, including leather top, fenders, lamps, horn, tools, etc. Less miles seat $30 extra. Write for full particulars.

Victor Automobile Mfg. Co. 114 Carroll St., St. Louis, Mo.

The Lasco Folding Glass Front

$35.00

A simple, effective, correctly designed Folding Glass Front. Mahogany finish wood frame, trimmed in brass. Crystal plate, steel stay rods, bottom of frame shaped to desired any standard car; can be attached easily and quickly.

We make the London Tops: write for details and prices.

LONDON AUTO SUPPLY CO., 1234 Michigan Av., Chicago.

NON CURLING

Upon the Film, more than upon lens or camera, depends the quality of the picture. Be sure it's "Kodak" film, the dependable film, with which you load your Kodak. To guard against undesirable substitutes look for "N. C." on the box and "Kodak" on the spool end.

EASTMAN KODAK CO., Rochester, N. Y., *The Kodak City.*

"EASTWARD

Through the

STORIED NORTHWEST"

Describes the way homeward from

SOUTHERN CALIFORNIA

BY WAY OF THE

SHASTA–NORTHERN PACIFIC ROUTE.

Columbia River, Puget Sound, Mts. Shasta and Adams, Lake Pend d'Oreille, Clark Fork River, Yellowstone Park, the Badlands of North Dakota, Minnesota Lakes, are a few of the many scenic features found.

Send SIX CENTS for the new booklet and see what a treat is in store for those who thus return home

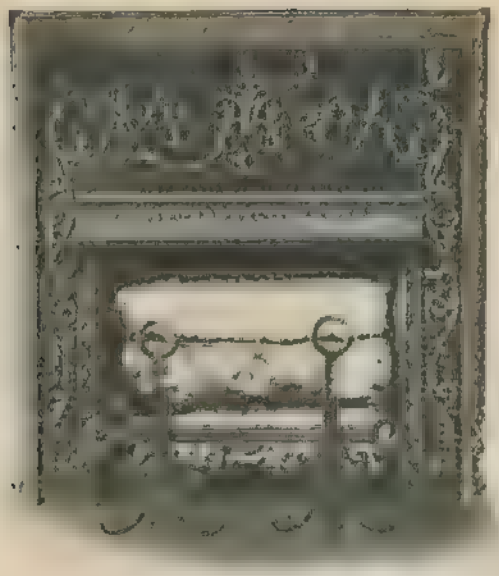
A M CLELAND G P A.
St Paul Minn

Northern Pacific Railway

ALASKA YUKON-PACIFIC EXPOSITION, 1909

NORTHERN PACIFIC

NORTHERN PACIFIC



A New Departure in Steam Heating

Using Gas Fuel

Can be operated for

1½ cts. per hour—Artificial Gas

¼ cts. per hour—Natural Gas

Adjustable for all pressures and easily regulated to burn either gas perfectly.

The Garwood Steam Heater

SAVES HEAT
FUEL and MONEY

No Smoke, Odor, Dirt or Ashes

NO CHIMNEY REQUIRED

A modern Heater which solves a problem that has been worrying people for many years.

A COMPLETE STEAM PLANT

Containing in one piece, Steam Radiator and Beautiful Open Fireplace to fit into Mantel-Piece already in the room, or it forms its own Mantel

Unique in Construction
Handsome in Appearance
Marvelous in Efficiency

The Garwood is ever ready and everlasting. Will give more heat with a smaller consumption of Gas than any other Heater on the market

Send for free catalogue "H" and booklet, "Just Gas Talk." Sold direct to users, where we have no established agency.

THE J. H. McLAIN CO., Canton, Ohio

The New Steel Range

Sold in a New Way

NOVO Steel Range is a thing of beauty and efficiency—handsome to look at, long to wear, quick to bake.

We believe it to be the best steel range that the stove-maker's art can produce, and to prove our belief we are selling it on a new and liberal plan.

If you like the appearance of

Novo *Steel Range*

your dealer will set it up in your kitchen. You may examine it from top to bottom and try it for

30 days free

If it isn't all that we claim, the dealer will take it away, not charging you a cent. We stand behind him. Isn't that better than risking purchase by mail?

Our booklet, "How to Select a Range Intelligently," tells the whole plan. Write for it, and we will refer you to a dealer who sells NOVO Steel Range.

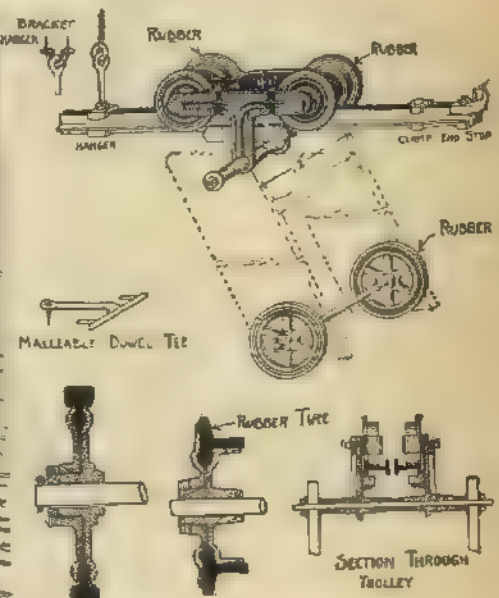
GLAZIER STOVE CO.,
212 Main St., Chelsea, Mich.

Makers of B. & B. Oil Cook Stoves and Heaters, Gasoline and Alcohol Stoves.

MILBRADT ROLLING STORE LADDERS.

No. 1—Ladder complete with running parts, ... each $15.00
No. 2—Ladder complete with running parts, ... " 15.00
No. 3—Ladder complete with running parts, ... " 15.00
Steel Track, for Nos. 1 and 3, regular strength, including brackets and screws, ... per foot .35
Steel Track, for Nos. 1 and 3 extra strong, including brackets and screws, ... " .35
Hardwood Track, for No. 2, including screws, ... " .20

MYERS' CUSHION TIRE STORE LADDERS.



For Shipment from Factory

Ladder and Trolley, complete, average weight 60 lbs. each $ 6.00
Track, complete with hangers, weight per ft. 2 lbs. " per foot .30

DIRECTIONS FOR FITTING.

To find the required length of ladder, measure from floor to floor, or from floor to ceiling, the height of room 11 ft. (this being the amount of space required for ladder, tracks and hangers) and one inch; the result will be the length of the ladder from hole at top to hole at bottom of ladder.

The ceiling is well known to be angle-iron, all of which is very near an even thing and can be exploded from ceiling by means of lag screws, either pointed or right, by first drilling as for wood screws; by this means the track can be placed close to the ceiling and can be fastened on an uneven ceiling without any trouble and without any blocking or bridging. As these are made in many lengths, tracks

This ladder is made of the best material, thoroughly finished and warranted, has open panel sides 5 in. wide with 5 in. steps, and is made with special malleable iron tees, which make the strongest connection possible. The width of steps between the sides is 12 in.

The track is made of angle iron, and is provided with hardened steel bearings and 3 in. cast iron wheels, turned and bored to fit the axles, and run on planed surfaces.

The flat traveler is made of 1/2 inch diameter iron, provided at each end with rubber cushions, and is shaped in such a position as to be impossible to get off the track. The wheels are fitted with a device which prevents them from becoming loose. In this manner the ladder will adjust itself to the track. With the use of any other style of track, the noise of ladders is overcome.

When the ladder is put up, the length of the rung can be found, and to place the lower traveler, this by boring new holes at the proper point, so as to have the ladder hang level.

1847 ROGERS BROS. A1

Fine Silver Plated Flatware

A1 Sectional and Triple Plated on 21 per cent. Nickel Silver

Cuts show size of Tea Spoons.

TIPPED PATTERN.

Tea Spoons.

No.		Per doz
2182	A1 plate	$ 5 67
2182½	XII "	6 67
2183	Triple "	8 00

Dessert Spoons.

2183½	A1 plate	$10 00
2184	XII "	11 34
2184½	Triple "	13 34

Table Spoons.

2185	A1 plate	$11 34
2185½	XII "	13 34
2186	Triple "	16 00

Dessert Forks.

2186½	A1 plate	$10 00
2187	XII "	11 34
2187½	Triple "	13 34

Medium Forks.

2188	A1 plate	$11 34
2188½	XII "	13 34
2189	Triple "	16 00

FIDDLE PATTERN.

Tea Spoons.

No.		Per doz
2189½	A1 plate	$ 5 67
2190	XII "	6 67
2190½	Triple "	8 00

Dessert Spoons.

2191	A1 plate	$10 00
2191½	XII "	11 34
2192	Triple "	13 34

Table Spoons.

2192½	A1 plate	$11 34
2193	XII "	13 34
2193½	Triple "	16 00

Dessert Forks.

2194	A1 plate	$10 00
2194½	XII "	11 34
2195	Triple "	13 34

Medium Forks.

2195½	A1 plate	$11 34
2196	XII "	13 34
2196½	Triple "	16 00

WINDSOR PATTERN.

Tea Spoons.

No.		Per doz
2197	A1 plate	$ 5 67
2197½	XII "	6 67
2198	Triple "	8 00

Dessert Spoons.

2198½	A1 plate	$10 00
2199	XII "	11 34
2199½	Triple "	13 34

Table Spoons.

2200	A1 plate	$11 34
2200½	XII "	13 34
2201	Triple "	16 00

Dessert Forks.

2201½	A1 plate	$10 00
2202	XII "	11 34
2202½	Triple "	13 34

Medium Forks.

2203	A1 plate	$11 34
2203½	XII "	13 34
2204	Triple "	16 00

SHELL PATTERN.

Tea Spoons.

No.		Per doz
2204½	A1 plate	$ 5 67
2205	XII "	6 67
2205½	Triple "	8 00

Dessert Spoons.

2206	A1 plate	$10 00
2206½	XII "	11 34
2207	Triple "	13 34

Table Spoons.

2207½	A1 plate	$11 34
2208	XII "	13 34
2208½	Triple "	16 00

Dessert Forks.

2209	A1 plate	$10 00
2209½	XII "	11 34
2210	Triple "	13 34

Medium Forks.

2210½	A1 plate	$11 34
2211	XII "	13 34
2211½	Triple "	16 00

VESTA PATTERN.

Tea Spoons.

No.		Per doz
2212	A1 plate	$6 34
2212½	XII "	7 34
2213	Triple "	8 67

Dessert Spoons.

2213½	A1 plate	$11 34
2214	XII "	12 68
2214½	Triple "	14 68

Table Spoons.

2215	A1 plate	$12 68
2215½	XII "	14 68
2216	Triple "	17 34

Dessert Forks.

2216½	A1 plate	$11 34
2217	XII "	12 68
2217½	Triple "	14 68

Medium Forks.

2218	A1 plate	$12 68
2218½	XII "	14 68
2219	Triple "	17 34

The above prices are subject to the regular discount.

1847 ROGERS BROS. A1

Fine Silver Plated Flatware

A1 Sectional and Triple Plated on 21 per cent Nickel Silver

Cuts show size of Tea Spoons

VINTAGE FRENCH GRAY PATTERN

Tea Spoons.

No.	Per doz.
2220 A1 plate	$ 6 34
2220½ XII "	7 34
2221 Triple "	8 67

Dessert Spoons.

2221½ A1 plate	11 34
2222 XII "	12 68
2222½ Triple "	14 68

Table Spoons.

2223 A1 plate	12 68
2223½ XII "	14 68
2224 Triple "	17 34

Dessert Forks.

2224½ A1 plate	11 34
2225 XII "	12 68
2225½ Triple "	14 68

Medium Forks.

2226 A1 plate	12 68
2226½ XII "	14 68
2227 Triple "	17 34

BERKSHIRE PATTERN

Tea Spoons.

No.	Per doz.
2227½ A1 plate	$ 6 34
2228 XII "	7 34
2228½ Triple "	8 67

Dessert Spoons.

2229 A1 plate	11 34
2229½ XII "	12 68
2230 Triple	14 68

Table Spoons.

2230½ A1 plate	12 68
2231 XII "	14 68
2231½ Triple "	17 34

Dessert Forks.

2232 A1 plate	11 34
2232½ XII "	12 68
2233 Triple "	14 68

Medium Forks.

2233½ A1 plate	12 68
2234 XII "	14 68
2234½ Triple "	17 34

COLUMBIA PATTERN

Tea Spoons.

No.	Per doz.
2235 A1 plate	$ 6 34
2235½ XII "	7 34
2236 Triple "	8 67

Dessert Spoons.

2236½ A1 plate	11 34
2237 XII "	12 68
2237½ Triple "	14 68

Table Spoons.

2238 A1 plate	12 68
2238½ XII "	14 68
2239 Triple "	17 34

Dessert Forks.

2239½ A1 plate	11 34
2240 XII "	12 68
2240½ Triple "	14 68

Medium Forks.

2241 A1 plate	12 68
2241½ XII "	14 68
2242 Triple "	17 34

AVON PATTERN

Tea Spoons.

No.	Per doz.
2242½ A1 plate	$ 6 34
2243 XII "	7 34
2243½ Triple "	8 67

Dessert Spoons.

2244 A1 plate	11 34
2244½ XII "	12 68
2245 Triple "	14 68

Table Spoons.

2245½ A1 plate	12 68
2246 XII "	14 68
2246½ Triple "	17 34

Dessert Forks.

2247 A1 plate	11 34
2247½ XII "	12 68
2248 Triple "	14 68

Medium Forks.

2248½ A1 plate	12 68
2249 XII "	14 68
2249½ Triple "	17 34

LOTUS PATTERN

Tea Spoons.

No.	Per doz.
2250 A1 plate	$ 6 34
2250½ XII "	7 34
2251 Triple "	8 67

Dessert Spoons.

2251½ A1 plate	11 34
2252 XII "	12 68
2252½ Triple "	14 68

Table Spoons.

2253 A1 plate	12 68
2253½ XII "	14 68
2254 Triple "	17 34

Dessert Forks.

2254½ A1 plate	11 34
2255 XII "	12 68
2255½ Triple "	14 68

Medium Forks.

2256 A1 plate	12 68
2256½ XII "	14 68
2257 Triple "	17 34

PRISCILLA PATTERN

Tea Spoons.

No.	Per doz.
2257½ A1 plate	$ 6 34
2258 XII "	7 34
2258½ Triple "	8 67

Dessert Spoons.

2259 A1 plate	11 34
2260 XII "	12 68
2260½ Triple "	14 68

Table Spoons.

2261 A1 plate	12 68
2261½ XII "	14 68
2262 Triple "	17 34

Dessert Forks.

2262½ A1 plate	11 34
2263 XII "	12 68
2263½ Triple "	14 68

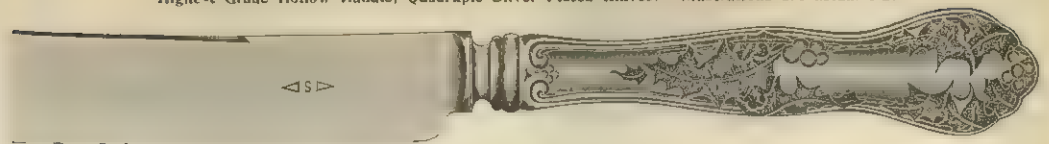
Medium Forks.

2264 A1 plate	12 68
2264½ XII "	14 68
2265 Triple "	17 34

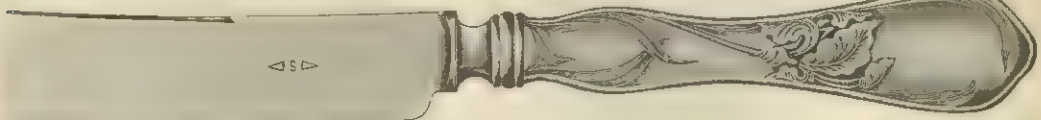
The above prices are subject to the regular discount.

E. H. H. SMITH SILVER CO.'S (Inc.)

Highest Grade Hollow Handle, Quadruple Silver Plated Knives. Illustrations are actual size.



No 2146 Medium Knives, Holly pattern, French gray . . . . . per dozen, $20 00
No 2147 Dessert Knives, Holly pattern, French gray . . . . . " 19 60



No. 2148 Medium Knives, Iris pattern, French gray . . . . . per dozen, $20 00
No. 2149 Dessert Knives, Iris pattern, French gray . . . . . " 19 60

No 2150 Medium Knives, York Rose pattern, bright finish. . . . . per dozen, $20 00
No 2151 Dessert Knives, York Rose pattern, bright finish. . . . . " 19 60

No. 2152 Medium Knives, Marseilles pattern, bright finish . . . . . per dozen, $20 00
No 2153 Dessert Knives, Marseilles pattern, bright finish. . . . . " 19 60

E. H. H. Smith Silver Co., Creators of Art and Quality in Plated Flatware.

HOLLY PATTERN
(French Gray)

◀S▶XX
TRADE MARK.

YORK ROSE PATTERN.

"Holly"
"York Rose"
"Iris"
"Marseilles"

These designs are all popular. They harmonize with the finest patterns in Sterling, and for this reason can be appropriately used with Sterling.

We do not make the low grades of plated ware known as "A 1," "Extra," "Plus" or "Single Plate."

IRIS PATTERN.
(French Gray)

WE GUARANTEE OUR GOODS TO GIVE ABSOLUTE SATISFACTION.

MARSEILLES PATTERN.

No. 2154 Tea Spoons, per doz	$ 6 00	No 2161 Tea Spoons, per doz	$ 6 00	No. 2168 Tea Spoons, per doz	$ 6 00	No 2175 Tea Spoons, per doz	$ 6 00
No. 2155 Dessert Spoons, "	10 70	No 2162 Dessert Spoons, "	10 70	No 2169 Dessert Spoons, "	10 70	No 2176 Dessert Spoons, "	14 70
No 2156 Table Spoons, "	12 00	No 2163 Table Spoons, "	12 00	No 2170 Table Spoons, "	12 00	No 2177 Table Spoons, "	12 00
No 2157 Dessert Forks, "	10 70	No 2164 Dessert Forks, "	10 70	No 2171 Dessert Forks, "	10 70	No 2178 Dessert Forks, "	10 70
No. 2158 Medium Forks, "	12 00	No 2165 Medium Forks, "	12 00	No 2172 Medium Forks, "	12 00	No 2179 Medium Forks, "	12 00
No. 2159 Sugar Shells, each.	1 10	No 2166 Sugar Shells, each.	1 10	No 2173 Sugar Shells, each.	1 10	No 2180 Sugar Shells, each	1 10
No. 2160 Butter Knives, "	1 35	No 2167 Butter Knives, "	1 35	No 2174 Butter Knives, "	1 35	No. 2181 Butter Knives, "	1 35

The above prices are subject to the regular discount.

Fine Silver Plated Flatware.

A1 Sectional and Triple Plated on 21 Per Cent Nickel Silver.

PRICES PER DOZEN.

YORK PATTERN.

No.	Tea Spoons.	Doz.
2272	A1 plate	$ 5 70
2273	XII "	6 60
2274	Triple "	7 80
	Dessert Spoons.	
2275	A1 plate	$10 20
2276	XII "	11 40
2277	Triple "	13 20
	Table Spoons.	
2278	A1 plate	$11 40
2279	XII "	13 20
2280	Triple "	15 60
	Dessert Forks.	
2281	A1 plate	$10 20
2282	XII "	11 40
2283	Triple "	13 20
	Medium Forks.	
2284	A1 plate	$11 40
2285	XII "	13 20
2286	Triple "	15 60

CEDRIC FRENCH GRAY PATTERN.

No.	Tea Spoons.	Doz.
2287	A1 plate	$ 5 70
2288	XII "	6 60
2289	Triple "	7 80
	Dessert Spoons.	
2290	A1 plate	$10 20
2291	XII "	11 40
2292	Triple "	13 20
	Table Spoons.	
2293	A1 plate	$11 40
2294	XII "	13 20
2295	Triple "	15 60
	Dessert Forks.	
2296	A1 plate	$10 20
2297	XII "	11 40
2298	Triple "	13 20
	Medium Forks.	
2299	A1 plate	$11 40
2300	XII "	13 20
2301	Triple "	15 60

YALE PATTERN.

No.	Tea Spoons.	Doz.
2302	A1 plate	$ 5 70
2303	XII "	6 60
2304	Triple "	7 80
	Dessert Spoons.	
2305	A1 plate	$10 20
2306	XII "	11 40
2307	Triple "	13 20
	Table Spoons.	
2308	A1 plate	$11 40
2309	XII "	13 20
2310	Triple "	15 60
	Dessert Forks.	
2311	A1 plate	$10 20
2312	XII "	11 40
2313	Triple "	13 20
	Medium Forks.	
2314	A1 plate	$11 40
2315	XII "	13 20
2316	Triple "	15 60

BERWICK FRENCH GRAY PATTERN.

No.	Tea Spoons.	Doz.
2317	A1 plate	$ 5 70
2318	XII "	6 60
2319	Triple "	7 80
	Dessert Spoons.	
2320	A1 plate	$10 20
2321	XII "	11 40
2322	Triple "	13 20
	Table Spoons.	
2323	A1 plate	$11 40
2324	XII "	13 20
2325	Triple "	15 60
	Dessert Forks.	
2326	A1 plate	$10 20
2327	XII "	11 40
2328	Triple "	13 20
	Medium Forks.	
2329	A1 plate	$11 40
2330	XII "	13 20
2331	Triple "	15 60

SEVILLE PATTERN.

No.	Tea Spoons.	Doz.
2332	A1 plate	$ 5 70
2333	XII "	6 60
2334	Triple "	7 80
	Dessert Spoons.	
2335	A1 plate	$10 20
2336	XII "	11 40
2337	Triple "	13 20
	Table Spoons.	
2338	A1 plate	$11 40
2339	XII "	13 20
2340	Triple "	15 60
	Dessert Forks.	
2341	A1 plate	$10 20
2342	XII "	11 40
2343	Triple "	13 20
	Medium Forks.	
2344	A1 plate	$11 40
2345	XII "	13 20
2346	Triple "	15 60

TIPPED PATTERN

No.	Tea Spoons.	Doz.
2347	A1 plate	$ 5 10
2348	XII "	6 00
2349	Triple "	7 20
	Dessert Spoons.	
2350	A1 plate	$ 9 00
2351	XII "	10 20
2352	Triple "	12 00
	Table Spoons.	
2353	A1 plate	$10 20
2354	XII "	12 00
2355	Triple "	14 40
	Dessert Forks	
2356	A1 plate	$ 9 00
2357	XII "	10 20
2358	Triple "	12 00
	Medium Forks	
2359	A1 plate	$10 20
2360	XII "	12 00
2361	Triple "	14 40

The above prices are subject to the regular discount.

The Holley 1908 Carburetor

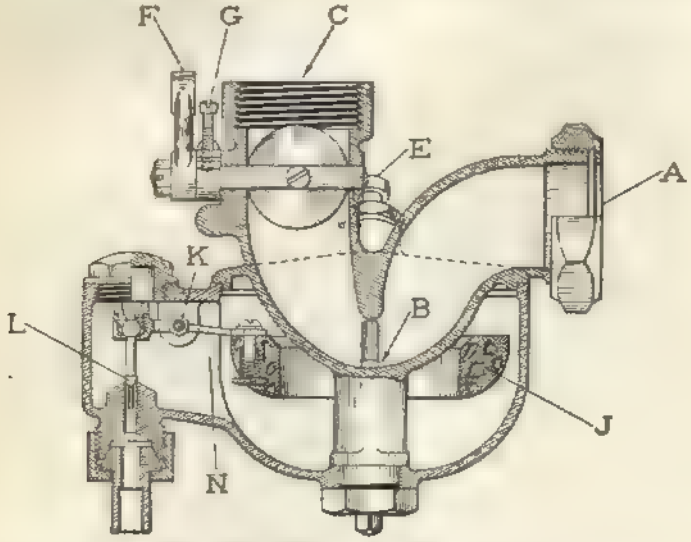
The Holley 1908 carburetor, which is claimed to be an automatic carburetor without moving parts, is manufactured by the Holley Bros. Co., Detroit, Michigan.

In the Holley carburetor a high air velocity is obtained in the mixing chamber by applying the principle of the Venturi tube. This feature, tho not itself original with the Holley carburetor, is important because it is seldom correctly applied, it is claimed. The true Venturi tube acts to discharge a liquid or gas with a velocity thru the smallest section of the tube greater than the velocity due to the head alone.

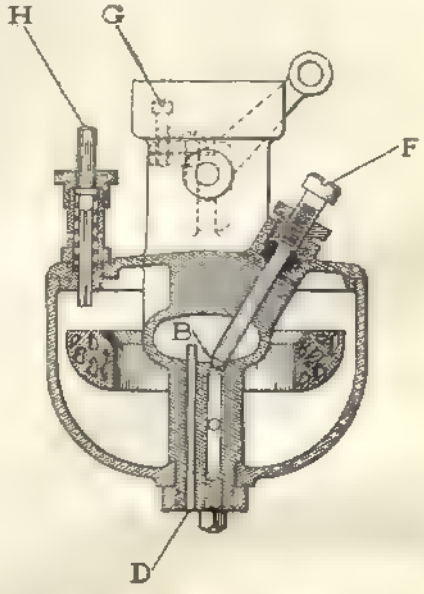
Referring to the sectional views, A is the air inlet thru which air passes downward and up thru a U-shaped tube, which is constricted at its lowest point. In the floor of the U is the gasoline orifice B, which is regulated by a needle valve, E. The carburetted mixture passes thru a butterfly throttle valve and on to the motor by the connection C. The float chamber surrounds the lowest part of the U, and has an annular cork float, J, which controls the gasoline valve L, thru a lever, N, pivoted at K. The U-shaped mixing chamber is merely the Venturi tube in a special form, allowing a very high air velocity to be obtained at B.

The gasoline level in the float chamber, instead of being slightly below the orifice B, is about one-eighth inch higher, and it is in this fact that a radical departure lies. In the new Holley carburetor there is a puddle of gasoline one-eighth inch deep in the bottom of the U when the motor is at rest. Consequently, when the motor is starting or running very slowly, the air does not have to lift the gasoline at all, but simply draws over the puddle and is carburetted by surface evaporation. As the throttle is opened and the air velocity increases, the puddle is gradually swept away by the strong air current over it, thus reducing the surface area of the puddle and maintaining constant proportions in the mixture. At the higher speeds the puddle is wiped out entirely, and a spray of the ordinary sort takes its place.

To start the motor, the float is depressed by the primer H. To prevent the mixing chamber from being flooded to excess, the drain pipe D is provided. The throttle valve is operated by the lever F, and the adjustable stop screw, G, permits regulation of the opening for minimum speed.

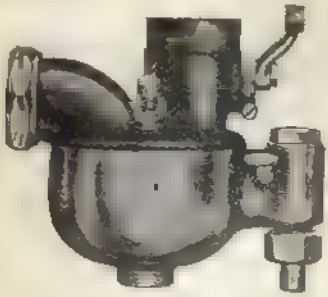


The "Holley" 1908 Carburetor, sectional side elevation.



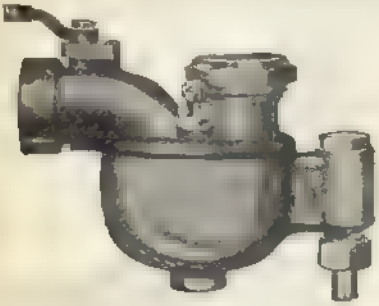
The "Holley" 1908 Carburetor: sectional end elevation.

The adjustment of this carburetor is exceedingly simple, practically all of it being done thru the needle valve E. In exceptional cases the level of the gasoline may



1908 Holley Carburetor Exterior, Top Outlet Type

be too high, which would cause an overrich mixture at low speeds; or it is possible that the level might be too low. To remedy this the lever is bent down to lower the gasoline level and by bending the lever upward the lever will be raised. The normal

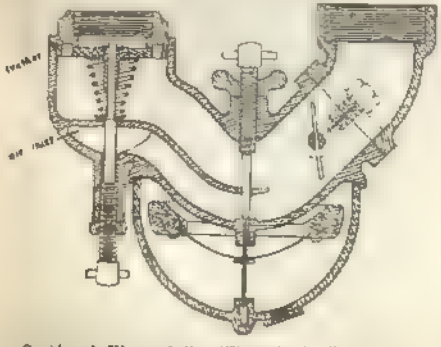


1908 Holley Carburetor, Side Outlet Type

level should cause a puddle to form one-eighth inch deep at B. In either case either adjustment can be made by bending the lever N slightly. All other adjustments are taken care of by the needle valve E.

The "Rutenber" Carburetor

E. A. Rutenber, 800 Helm street, Logansport, Ind., the inventor of the well-

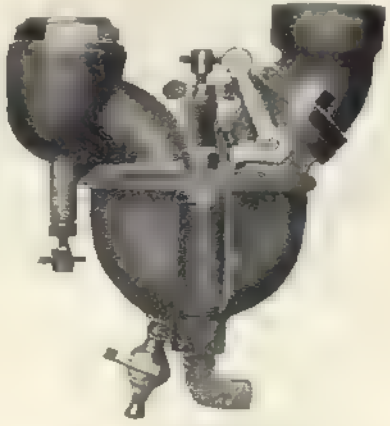


Sectional View of the "Rutenber" Carburetor.

known Rutenber motor, has brought out a new carburetor which contains some very unique features.

The mixing chamber takes the form of a half circle, with the spray nozzle at the bottom and in the center of the bowl, which eliminates any change in the quality of the mixture in ascending or descending hills or in turning corners. The gasoline valve is controlled by an improved lever type float which is claimed to prevent flooding. The needle valve is located at the top of the mixing chamber, which makes it very convenient to adjust.

The mixing chamber is divided into two parts, having two distinct openings, one controlled by an automatic air valve and



The "Rutenber" Carburetor

the other having a fixt air opening which allows a predetermined amount of air to pass the spray nozzle. The flow of air remains practically constant at all engine speeds.

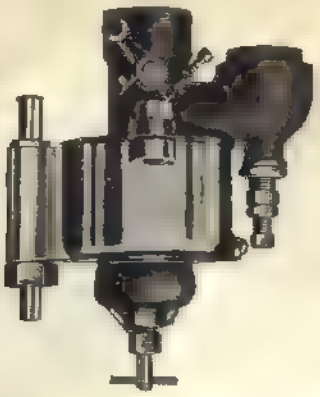
The connection to the engine is bolted to a flange, which is placed at an angle of 45 degrees, and by turning the same around the carburetor can be used as a vertical or horizontal outlet. The Rutenber Carburetor is made of brass and is made in three sizes, 1-inch 1¼-inch and 1½ inch iron pipe sizes and lists at $15.00, $18.00 and $20.00 respectively

"Kantryp" Auto Gloves

The Ellsworth & Thayer Mfg. Co., Milwaukee, Wis., have brought out a new auto glove known as the "Kantryp."

In this glove the fingers are made with two lengthwise seams, both at the back of the finger, away from wear. At that point where the fingers spread the "Kantryp" glove is reinforced against ripping by a patent strap facing between the fingers. The thumb seam is also doubly reinforced by a lap in the leather and is double stitched

The glove is made with a stout and comfortable military cuff that is claimed not to sag or break. The gloves are made of selected coltskin, black, reindeer or drab, at $2.50 per pair; of imported cape, tan at $5.00, and of imported Mocha, reindeer or drab at $5.00.



The Holley Automatic Carburetor

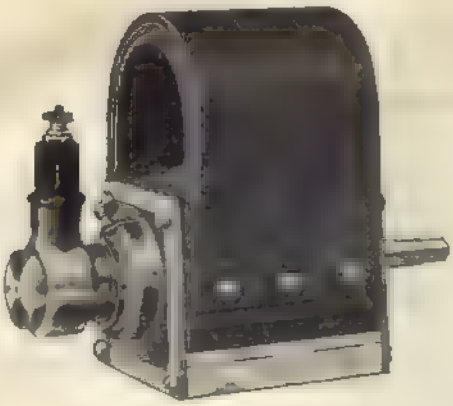
is not built around a single "talking point." It is the product of careful attention to a multiplicity of details, of a thoroughly modern plant equipped for rapid production, and of a manufacturing experience that has embraced over 30,000 Holley Carburetors. Here are some of its features:

Balanced, concentric, hollow metal float—hard steel non-wearing needle valve—adjustable float level—strangling chamber around spray nozzle, giving a perfect mixture at low speeds—light and sensitive auxiliary air valve—body made of hard red brass—phosphor bronze springs—butterfly throttle valve, etc.

Holley carburetors are used by the Autocar Co., Cadillac Motor Car Co., Continental Motor Mfg. Co., Dragon Automobile Co , Ford Motor Co , Holsman Automobile Co., Mitchell Motor Car Co., Nordyke & Marmon Co., Olds Motor Works, E. R. Thomas Detroit Co., and the Winton Motor Carriage Co.

Holley Brothers Co.

Detroit, Michigan.



Model S Magneto.

Distributer arranged for separate mounting.

1908
Holley Magneto

Efficiency has always been recognized as a prime characteristic of the Holley Magneto. In the new model "S" the owner's convenience has been studied from a new and exceedingly practical standpoint.

From the first the Holley Magneto has been designed to give the user the benefit of batteries in emergencies. The battery and the magneto sparked through the same plugs, the same high tension wires and the same distributer. And the same timer was used whether the battery or the magneto furnished the current. All that was necessary was to throw the switch.

This year the independence of magneto and battery has been completed by mounting the timer and distributer separately, on a half-time shaft of the engine, exactly like any timer and distributer when no magneto is used. This permits the magneto to be removed for repairs without a moment's delay and without preventing use of the car with battery ignition.

The magneto system remains unchanged, and the wiring is in all respects as it was before. The only difference is that the two sources of current -battery and magneto- are now completely independent of each other, and either may be removed at will.

GUARANTEE

1908 Model "S" Magneto is guaranteed free from defects in material, workmanship or operation. We will make good by repair or replacement any machine or parts of same proving defective within one year from date of sale.

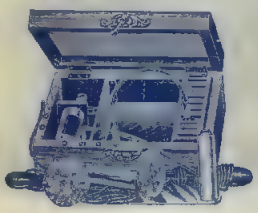
Holley Brothers Co.
Detroit, Mich.

Galvanic and Faradic Medical Batteries

For Physicians, Medicine Venders, Druggists, Medicine Schemists and Compounders, Mail-Order Houses and General Remedy Purveyors.

These Batteries are Especially Designed and Made for Home Use.

Dr. Piper's 10 Cell Galvanic and Faradic Battery No. 2.



¶ Light and Heat is Life. Electricty is the foundation of both. Thus Electricityrightly applied dispels disease as a natural sequel of its very essence. :::

No. 2. This Faradic and Galvanic Battery is a simple combination. It will be found of the very greatest value in the home for treatment of all kinds of diseases which are susceptible to electrical treatment. This battery can be used for removing superfluous hairs from the face. It produces every kind of electric current the faradic alone, the galvanic alone, or both combined. Made artistically of highly polished, quarter sawed oak. All metal parts nickle plated. The wiring of the battery is invisible being placed in a false bottom of the box. A small, compact and neat coil furnishes the faradic current. This battery is self registering, each cell represents a volt and a half, and either one or all can be utilized at a time. Complete with two four-foot cords, two nickle plated hand electrodes, two wood handle sponge electrodes one nickle plated foot plate and a bottle of solution for charging the battery. Full directions for the treatment of diseases and how to operate it.

Each 8.75

The Home Beautifier Battery No. 5.

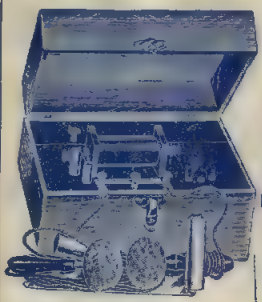
No. 5. This battery should find a welcome place on the toilet table of every lady. If she wishes to have a good complexion to keep the face free from wrinkles and destroy unsightly blemishes and restore the natural facial contour to Nature's way using the facial massage roller and the battery, is the only successful and scientific treatment. By its use the circulation and nerve force is properly stimulated and increased in a healthy way, tender nerves and muscles are not brushed by rubbing and pinching, nor are the minute pores of the skin clogged up by the application of a foreign substance. In a nicely finished hardwood, quarter sawed oak case, all nickle plated and mounted on a highly polished ebonized base. A dry cell is employed which can be easily replaced at a small expense. Two nickle plated hand electrodes, with silk cords, one wood handle sponge electrode, an electric hair brush, electric facial massage roller, electric foot plate and an electric bust developer. Full directions for the care of the face accompany each battery. Each 6.25

ULLERY'S No. 6 Double Dry Cell Medical Battery.

Ullery's No. 6 is the most complete and up-to-date battery, it is the acme of perfection. An ideal battery for the family or the physician's use, simple and compact. size 8¾x8¾x6¾ inches, it has **two powerful dry cells,** making its range of power sufficient to meet all requirements of physicians, where patients require a very powerful faradic current. Quartered oak, highly polished case, with fine nickel plated handle for carrying. It has an **improved induction silk mounted coil,** larger than in No. 3 or 4, to permit the flow of the powerful faradic current. It has an improved vibrator post with binding nut, and perfect rheotome or current interrupter heavily nickel plated and mounted on a highly polished, ebonized base. By using the double switch you bring into action the **power of both cells,** thus giving a very strong, yet perfectly smooth and even current. This battery is provided with index pointer showing the operator the amount of current being used. It is shipped, connected and ready for use. Complete with two conducting cords, with wooden handles, for treatment of all parts of the body, two nickel plated handles, for treatment of the arms and hands, one nickel plated foot plate for treatment of feet and limbs, and one electromagnetic hair brush to treat the scalp for dandruff, falling of the hair, etc. Each 7.45

Galvanic and Faradic Medical Batteries

ULLERY'S No. 3 Double Dry Cell Medical Battery.

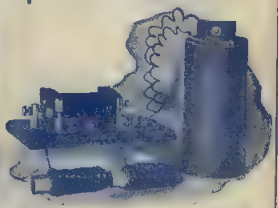


No. 3 Battery. Physicians and others who desire an extra strong faradic battery, will find this the most powerful machine on the market for the price. In a highly polished oak case, size 8x6x6 inches. Nickel plated and furnished in the very best style throughout. Nickel plated handle on the outside of the box. Two powerful dry cells are used in this machine. It is shipped with dry cells in position, connected and ready for use. The current can be regulated, smooth and even, and any degree of strength can be obtained, meeting the requirements of the weakest child to the strongest man. It generates all the different currents, primary, secondary and the two combined; either of which can be made more powerful, at will of operator, by drawing out shield running through center of coil. The coil and metal parts are mounted on a highly polished, ebonized base. The dry cells are the only part that can exhaust, and will last from four to twelve months, according to use. With complete equipment, namely:—Two four foot silk cords, with two nickel plated hand electrodes, two wood handle sponge electrodes, one nickel plated foot plate and electric hair brush. Each.... 4.59

ULLERY'S No. 4 Dry Cell Battery.

No. 4 Battery is the strongest and most compact of any on the market. Enclosed in a beautiful quarter sawed oak case, 4x5½x6½ inches. Shipped with cell in position, ready for use. So constructed that the cell can be removed by any person when exhausted and a new cell put in. It generates all the different currents, primary, secondary, and the two combined, either of which can be made more powerful at will of operator, by drawing out the shield running through center of coil. The interior parts, like post switch, sliding partition and bands around end of coil, are finely nickel plated. The coil and metal parts are mounted on a highly polished ebonized base. This battery is guaranteed in every respect, and with proper usage will last a life time. The dry cell is the only part that will exhaust, and this will last from 4 to 12 months according to the use. With complete equipment, namely: Two sponge electrodes, two ebonized wood handles, two nickel plated hand electrodes, two cords, each four feet long, one nickel plated foot plate, and book of instructions.
Each 2.98

ULLERY'S No. 0 Induction Coil.



No. 0. This instrument is very strong and can be used with one or two cells of dry battery. It is especially desirable for the use of travelers, in as much as it is very small and portable. This battery can be regulated to generate a faradic current that is smooth and strong, so strong that few can endure its full strength, and is regulated according to requirement. The base is made of quarter sawed oak, size 3½x6 inches. All metal parts are nickel plated. With each coil we furnish two conducting cords with nickel plated handles. Packed in box ready for use. Each 1.68

ACCESSORIES.

No. 29. A nickle plated massage roller for massaging and healing all parts of body, neck and face, removing wrinkles and developing the shrunken parts. Each .... .50

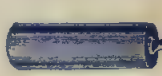
No. 25 Hair Brush Electrode, one of the favorite appliances, good, large size. Each ..... .50

MISCELLANEOUS ACCESSORIES.

No. 52. Bust Developer Electrode, improved style, very extensively employed with best results
Each ..... .50

No. 53. Covered Electrode. Insulated with soft rubber for general application with the hand.
Each ..... .50

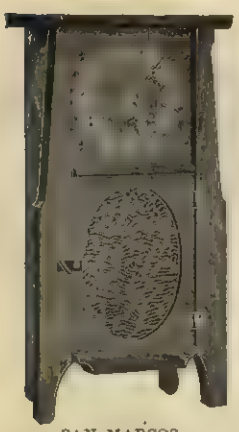
Universal Handle.
Pair ..... .35
With sponge-covered disc Pair ..... .50
Sponge Discs. Each .35



No. 7. Handles, solid metal, heavy nickel plated and finely polished
Per pair ..... .50

NEW HAVEN CLOCK CO.'S FINE MISSION CLOCKS.

GUARANTEED ACCURATE TIMEKEEPERS.



SAN MARCOS.
Mantel weathered oak Mission clock.

Wooden dial with white figures on a background of cobalt blue, fancy brass hands, height 21 inches, width 10¼ inches, dial 6 inches.

No. 6220 Each.....$8 35

LOS ALAMOS.
Mantel weathered oak Mission clock.

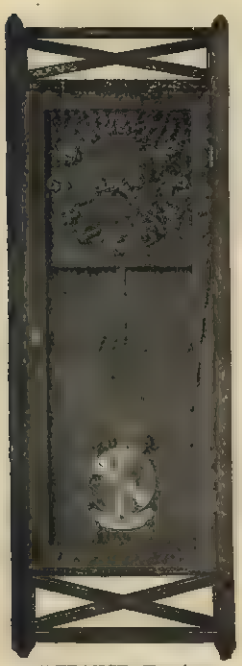
Six inch dial with brass numerals and hands, height 14½ inches, width 11¼ inches. Eight day, half-hour strike, cathedral gong.

No. 6221 Each.....$6 55

SAN PABLO.
Mantel weathered oak Mission clock.

Wooden dial with white figures on a background of cobalt blue, fancy brass hands, height 20 inches, width 11 inches, dial 6 inches.

No. 6222 Each.....$7 45



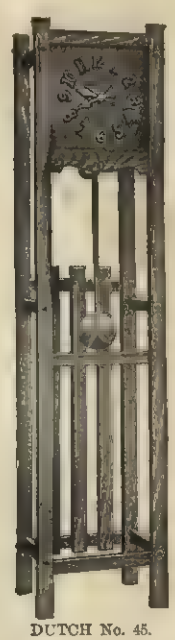
DURANCE—Hanging

Height 37¼ inches, width 15¾ inches, solid oak, Flemish finish.

No. 6223 Eight-day, time, each.....$28 40

No. 6224 Eight-day, half-hour strike, cathedral gong.....each, 30 50

No. 6225 Thirty-day, time, each.....31 20



DUTCH No. 45.

Height 63¼ inches, width 15¾ inches, oak, Flemish finish, eight-day, half-hour strike, cathedral gong, spring movement.

No. 6226 Each.....$24 15

DUTCH No. 40.

Height 77½ inches, width 17½ inches, oak, Flemish finish, eight-day, half-hour strike, cathedral gong, spring movement.

No. 6227 Each.....$35 35

DUTCH No. 20.

Height 78 inches, width 18¾ inches, oak, Flemish finish, eight-day, half-hour strike, cathedral gong.

No. 6228 Each.....$53 20

The above prices are subject to the regular discount.

New Haven Clock Co.'s Mantel Mission Clocks.

GUARANTEED ACCURATE TIMEKEEPERS.

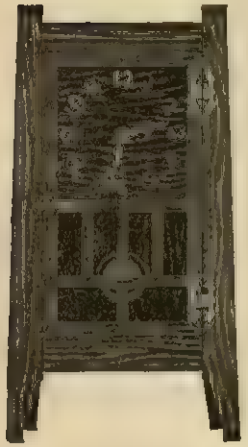
The Arabic figures on dial are painted in white on a background of cobalt blue, giving a very artistic effect, against the rich finish of the wood dial and case. The hands used are of an appropriate fancy design and finished in gilt.

MORO.
No. 6229 Height 13 inches, width 6¼ inches, dial 4 inches, mahogany case, each.....$4 70

VEGA.
No. 6230 Height 13 inches, width 6 inches, dial 4 inches, mahogany case, each.....$4 70

PALOS.
No. 6231 Height 13¾ inches, width 5½ inches, dial 4 inches, mission oak case, each.....$4 70

TOSCA.
No. 6232 Height 12½ inches, width 6¼ inches, dial 4 inches, mahogany case, each.....$5 70



SANTA CLARA.
No. 6233 Mantel Weathered Oak Mission Clock, six inch dial with brass numerals and hands, height 20¼ inches, width 11¼ inches, eight-day, half-hour strike on catheral gong, each.....$7 40

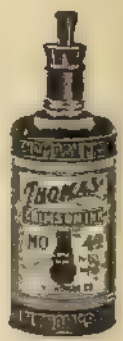
SAN BENITO.
No. 6234 Mantel Weathered Oak Mission Clock, wooden dial with white figures on a background of cobalt blue, fancy brass hands, height 21 inches, width 13½ inches, dial 6 each.....$8 35

SAN LUIS.
No. 6235 Mantel Weathered Oak Mission Clock, wooden dial with white figures on a background of cobalt blue, fancy brass hands, height 20 inches, width 13 inches, dial 6 inches, each.....$8 35

The above prices are subject to the regular discount.

WRITING INK.

LARGE BOTTLES.



Writing Fluid.

No. 91—	1 qt. bottle, w't per doz. 47 lbs.,	per dozen	$9.00
No. 92—	1 pt. bottle, w't per doz. 24 lbs.,	"	5.25
No. 93—	½ pt. bottle, w't per doz. 14 lbs.,	"	3.25

Writes blue, turns black. This is the best ink for any use where copying is not required. As it has great fluidity, and is free from sediment, is well suited for a copying ink, but will take one copy if taken immediately after writing.

ONE DOZEN IN A CASE.

Combined Writing and Copying Fluid

No. 111—	1 qt. bottle, w't per doz. 47 lbs.,	per dozen	$11.50
No. 112—	1 pt. bottle, w't per doz. 24 lbs.,	"	7.00
No. 113—	½ pt. bottle, w't per doz. 14 lbs.,	"	5.00

Writes blue, turns black. This ink is designed for an all-around office ink, combining fluidity with excellent copying qualities.

ONE DOZEN IN A CASE.

Black Copying Fluid

No. 211—	1 qt. bottle, w't per doz. 43 lbs.,	per dozen	$ 4.00
No. 212—	1 pt. bottle, w't per doz. 24 lbs.,	"	3.00
No. 213—	½ pt. bottle, w't per doz. 14 lbs.,	"	5.00

Writes black.

ONE DOZEN IN A CASE.

Crimson Ink

No. 491—	1 qt. bottle, w't per doz. 42 lbs.,	per dozen	$19.00
No. 492—	1 pt. bottle, w't per doz. 24 lbs.,	"	11.00
No. 493—	½ pt. bottle, w't per doz. 14 lbs.,	"	6.75

Brilliant color. Free from sediment. Will yield one copy.

ONE DOZEN IN A CASE.

SMALL BOTTLES.

No.	58—2	oz. bottles, cone, black writing fluid, wood top cork, weight per gross 66 lbs.,	per gross	$5.50
No.	57—2	oz. bottles, cylinder stand, black writing fluid, wood top cork, weight per gross 72 lbs.,	"	6.00
No.	97—2	oz. bottles, cylinder stand, blue-black writing fluid, wood top cork, weight per gross 66 lbs.,		7.20
No.	530—1½	oz. bottles, scarlet red ink, enamel top cork, weight per gross 30 lbs.,	"	7.50

NOS. 97, 57, 58, ONE GROSS IN A CASE. NO. 530, ONE DOZEN IN A BOX.

FOUNTAIN PEN INK.

No. 468

No. 464

No. 466

No. 468. 1 oz. bottle, [illegible] stand, blue black, wood top cork, weight per gross 30 lbs. . . . per gross $7.50
No. 464.—4 oz. bottle, [illegible] stand, blue black with filler, weight per dozen 6 lbs. . . . per dozen 2.00
No. 466.—Travelers round bottle in wood carrying [illegible] blue black, with filler, weight per dozen 5½ lbs. . . . " 3.00

NO. 4 [illegible] ONE DOZEN IN A WOOD BOX.

MUCILAGE.

No. 907

No. 906

Oriental, Made from Pure Gum

No. 907. 3 oz. cone [illegible] with [illegible] per gro. [illegible] gross . . . $ 6.00
No. 906. 2 oz. cylinder with brush, wt per gro. 72 lbs. per gross . . . 8.00
No. 904. 1 oz. office shield, with brush ¼ per gro. 84 lbs. per gross . . . 15.00

ONE QUARTER [illegible] IN A BOX.

Oriental, Made from Pure Gum

No. 901. [illegible] glass bottle, wt per doz. 36 lbs., per dozen $3.00
No. 902. [illegible] glass bottle, [illegible] 4 lbs. . . . 4.50

ONE [illegible] IN A BOX.

PASTE.

No. 840. [illegible] wide mouth, [illegible] with brush, [illegible] per gross . . . $7.50
No. 844. [illegible] wide mouth, [illegible] with brush, [illegible] per dozen 2 lb. . . . per dozen .25

Will not mould or sour, [illegible] anything on which it is used. A little water placed in the brush well under chamber will keep the brush always moist and [illegible]

NO. 840 ONE QUARTER DOZEN IN A BOX. NO. 844, ONE DOZEN IN A BOX.

Section View, showing Brush well.

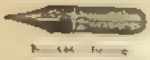
Especially Adapted for Mounting Photographs and General Office Use. Flask Light Bottle, Screw Top, with Brush

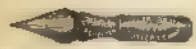
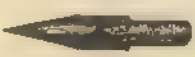
No. 839. 5 oz. SNOW FLAKE, wt per doz. 14 lbs. per dozen $3.50
No. 838.—8 oz. SNOW FLAKE, wt per doz. 18 lbs., " 5.00

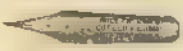
Will not mould or sour [illegible] anything on which it is used. A little water placed in the brush well under chamber will keep the brush always moist and [illegible]

ONE DOZEN IN A BOX.

MILLER BROS.' STEEL PENS.





All Numbers, per gross $6.75

LETTER PRESSES

With Wheel

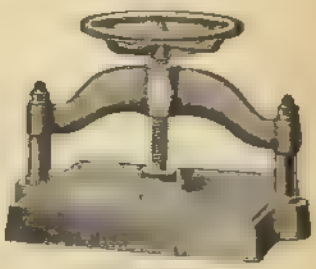
No. 4 [illegible] Each $ .50
No. 5 [illegible] " .75
No. 4½ [illegible] " 1.00
No. 15 [illegible] " 1.50

Style P

With Wheel or Ball Lever.

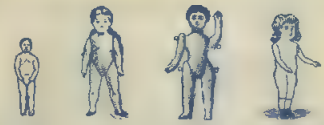
Style U

With Wheel or Ball Lever.



Price $ 8.00
" 10.00
" 12.00

CHINA BABIES - Staple Sellers



No. 1950. White China Cake Dolls, 5 gross in box
Per gross ..... .35

No. 2100 Cake Dolls, silver metal, 1 gross in box
Per gross ..... .35

No. 2150. China Baby, glazed finish, painted hair 2 inches long; one gross in box. Per gross ..... .85

No. 2153. China baby, long flowing hair, bisque finish body, length 2¼ in.; 1 gross in box. Gross..... .85

No. 2152. China Baby. Short curly hair, joined arms, length 2½ in ; 1 gross in box. Gross..... .85

No. 2161. China Baby. Painted hair jointed arms length 2½ inches, 1 gross in box. Gross ..... .85

No. 9759. China Baby. Painted hair, jointed arms and legs, length 2¼ in.; 1 gross in box. Gross..... .85

No. 2154. China Baby, painted hair, chubby body, 2⅜ inches long; ⅛ gross in box. Gross..... .85

No. 1956. China Baby, painted hair, gold shoes, 3¼ inches long; ¼ gross in box. Per gross..... .85

No. 2172. China Baby, painted hair with jointed arms, very pretty; 3⅜ inches long; ¼ gross in box. Per gross ..... 2.00 | Per dozen ..... .18

No. 2156. China Baby, painted hair with movable arms; a regular beauty, 3¾ inches long; one dozen in box.
Per gross ..... 2.60 | Per dozen ..... .23

No. 2156. China Baby, as above with movable arms and legs.
Per gross ..... 3.00 | Per dozen ..... .26

GENUINE BISQUE BABIES.

No. 2168. Bisque baby, long braided and ribbon tied hair, painted eyes and features, movable arms, painted shoes and stockings, flesh color, 3 inches long; 2 dozen in box.
Per gross ..... 3.00 Per dozen .. .. .26

GENUINE BISQUE DOLLS.

No. 2159. Bisque baby, long braided hair, painted shoes and stockings and eyes, jointed arms, beautiful hollow bisque body, 4¼ inches long; one dozen in box.
Per gross ..... 4.00 | Per dozen ..... .35

No. 2160 Bisque baby, as above, moving arms and legs
Per gross ..... 4.75 | Per dozen ..... .40

No. 2152. Bisque baby, 4½ in., jointed arms and legs, molded and painted shoes and stockings and hair, painted features and eyes, plump hollow bisque baby; one dozen in box. Per dozen ..... .40

No. 2166. Bisque baby 6½ in., movable arms and legs, molded hair, stockings and shoes, painted in colors, painted features and eyes, plump hollow bisque body; an extraordinary value; one dozen in box. Per dozen ..... .75

No. 2156. Bisque Boy Doll, hollow bisque body, movable arms and legs, painted features and eyes, imitation hair, painted shoes and stockings, very nicely shaped plump body, 6¼ inches long; one dozen in box. Per gross ..... 8.75 | Per dozen ..... .76

No. 9763. Bisque Baby, beautiful bisque finish, long flowing hair, glass eyes, dressed in knitted clothes and hoods, jointed arms and legs, painted shoes, 4½ inches; ⅛ dozen in box.
Per gross ..... 8.75 | Per dozen ..... .75

FINE BISQUE BABIES

No. 2163. Bisque Baby, painted ,eyes, shoes and stockings, long braided hair, jointed arms, fine hollow bisque body 6⅜ inches long; one dozen in box.
Per gross ..... 8.50 | Per dozen ..... .75

No. 2164. Bisque Baby, as above with movable arms and legs.
Per gross ..... 9.00 Per dozen ..... .80

No. 2167. Bisque Baby, sleeping eyes, long flowing hair, painted shoes and stockings, jointed arms and legs, beautiful quality bisque body, 4½ inches; each one in box. Per dozen ..... .85

BATHING STYLE BISQUE BABIES.

No. 2161. Bathing Bisque Baby, 4 in., hollow plump bisque body, jointed arms and legs, painted features and eyes, painted molded hair, color trimmed white bathing suit; one dozen in box.
Per dozen ..... .40

No. 2165. Bathing Bisque Baby, 5¼ in., jointed arms and legs, hollow plump bisque baby, molded hair and bathing suit color trimmed, painted features and eyes; one dozen in box.
Per dozen ..... .75

No. 2168. Bathing Bisque Baby, 6½ in., jointed arms and legs, heavy plump hollow bisque baby, sleeping eyes, painted features, long Rembrandt hair tied with bow, in molded bathing suit trimmed with colors.
Per dozen 2.00

KID BODY DOLLS

No. 2102. Kid Body Doll, Columbia Brand, sewed knee, hip joints; very fine quality, well sewed and stuffed in proportion, beautiful bisque head and features, long rembrandt flaxen hair, open work stockings and shoes. 14 inches long Dozen 2.00

No. 2104. Kid Body Doll. Sleeping eyes sewed knee joints with swivel hinge hip joint, can be sat down, fine open work stockings and shoes, genuine bisque head, heavy curly hair, hair stuffed body body size 16 inches the well-known Columbia brand Dozen 4.20

No. 2106. Kid Body Doll. Sleeping eyes, Columbia make. This is an exceptional value in the kid doll line. Swivel hinge joint hip with sewed joint knees, can be sat erect in chair; extra heavy, finely proportioned, plump, well built and stuffed body, beautiful bisque head and features, heavy curly wig, long open work black stockings and shoes, sewed elbow joints. At price we quote this is a peerless value; 21 inches long. Dozen 8.75

Popular Card and Dial Games

No. 9077. Card Games, assorted 6 styles in dozen, viz: Authors, Fox and Geese, Old Maid and Game of Snap. These are all well known card games; size of box 3¾x4¾, well put up, nicely lithographed tops. Gross ..... 3.50 Dozen ..... .30

No. 505. Card Games, 6 kinds assorted in dozen, good quality paper stock, cards printed in lithographed colors, decorated box; 3¼x4¾ in. Gross ..... 4.00 Dozen ..... .35

No. 502. As above, "Old Maid" only. Gross ..... 4.00 Dozen ..... .35

No 371. Card Games, 6 kinds assorted in package of 1 dozen, consists of Teddy Bear, Peter Coddles Mother Goose and other popular games printed in colors; in fancy lithographed box; 4½x5½ in. Dozen ..... .70

BOARD GAMES.

No. 515. Board Games, 6 kinds assorted in package comprising Babes in Woods, Fox and Hounds, Going to the Fire, etc., all well known popular games in colors, each in lithographed box, 5x5 in. Gross ..... 4.00 Dozen ..... .35

No. 497. Board Games, assorted 6 kinds in package of 1 dozen; these are new and catchy games embracing the latest kinds in the market, all printed in brilliant colors, in fine lithographed box; 9x14 in. Gross ..... 8.75 Dozen ..... .75

No. 10. Game of Pit. This famous game is too well known to require description. However, suffice it to say that this is the best quality in the market at the price. Dozen 3.60

AUTOGRAPH ALBUMS.

No. 2000. Autograph Album, nice stiff board covers, imitation leather with fancy stamped design, good heavy paper rounded corners, fly leaves on each side, nice appearing and a fine 5c value and seller. Gross ..... 4.00 Dozen ..... .35

No. 2001. Autograph Album, imitation leather cover in assorted bright colors, heavy embossed in gold and black with floral designs and panel picture, lithographed in colors. Word Album in cover. Front fly leaf printed in gold and colors with word "Album," assorted tinted papers, 18 leaves, size 5x8¼ in. ⅔ doz. in box Dozen ..... .70

No. 2002. Autograph Album, size 6½x9¾, 32 leaves, padded front cover embossed in gold and high colors. Also word Album in gold made of assorted designs and colors, six styles in a box back cover alike, good imitation Russia leather, fine quality writing paper tinted assorted colors in each book, front and back fly leaves imitation white moire silk, ½ in box Dozen 2.00

Doll Heads - Reliable Goods

China, Bisque and Minerva Metal

China Doll Heads. These doll heads are first quality goods, pressed hair, painted in black, tinted features and painted eyes; each one a popular size and a staple seller.

No.	Size	Dozen
1875.	0	.35
1875.	2	.42
1875.	4	.65
1875.	7	.75
1875.	8	.90
1875.	6	1.25
1875.	8	1.75

Bisque Doll Heads.

No. 288. Bisque Doll Head, size 0 with wig and glass eyes, fine made, well finished goods Dozen ..... .75

No 289. Bisque Doll Head, size 2 fine hair wig movable eyes, beautiful features well finished. Dozen 1.25

No. 289. Bisque Doll Head, size 8, good quality hair wig, movable eyes, beautiful features well made and finished. Dozen 1.75

Extra Quality Bisque Doll Heads.

Fine hair wigs sewed and parted in center, tied with ribbon bows, movable eyes, beautiful hair, features in natural flesh color.

No. 909. 10/0. Dozen 2.00
No. 909. 3/0. Dozen 3.75

Metal Doll Heads.

These metal doll heads are well nigh indestructible made of strong sheet brass in full sizes The features are molded into an artistic cast, finished in enameled flesh colors

No. 100. Minerva Doll Head, painted hair and eyes, size 1, 3 in. high. Dozen 80
No 100. Size 2, 3¾ in high Dozen 1.70
No 200. Minerva Doll Head. Painted hair and glass eyes

Size	Height	Dozen
1.	3 in.	1.50
2.	3½ in.	1.85
3.	3¾ in.	2.20
4.	4¼ in.	2.70
5.	4½ in.	3.25

No. 1200. Minerva Doll Heads, with painted hair, glass eyes and teeth, beautiful large head, 5½ in. high; size 6¾. Dozen 3.25

No. 400. Minerva Doll Head, sewed wig, glass eyes with exposed teeth, size 3, 4¾ in. high. Dozen 5.00

Size 5, 5¾ in. high. Dozen 7.25

No. 4000K. Minerva Doll Head, sewed wig, movable glass eyes with exposed teeth.

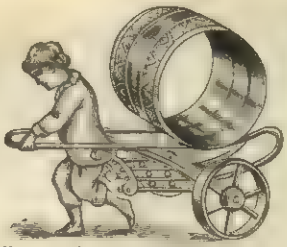
Size	Height	Dozen
3.	4¾ in.	6.50
4.	5½ in.	7.50
5.	5¾ in.	8.75
6.	6¼ in.	10.00
7.	6⅞ in.	11.50

No. 440K. Minerva Doll Head, very fine sewed wig, flowing tresses, movable eyes and exposed teeth finest type doll heads made.

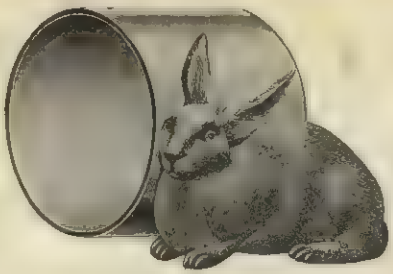
Size	Height	Dozen
3.	4¾ in.	7.00
4.	5½ in.	8.00
5.	5¾ in.	9.50
6.	6¼ in.	10.75
7.	6⅞ in.	12.50
8.	7¾ in.	15.50

Extra Fine Quality Quadruple Silver Plated Napkin Rings.—Guaranteed.

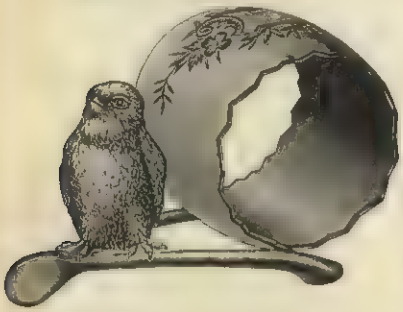
No. B-7 Napkin Ring.....each $2 00
Satin, bright cut engraved, gold lined.
(Illustration is exact size.)



No. W 179 Napkin Ring each $2 95
Burnished, revolving wheels. Length 4 inches, height 2¾ inches.

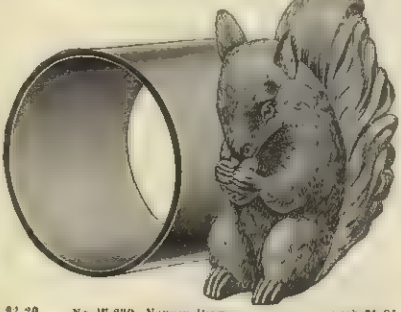


No. W-232 Napkin Ring.....each $1 85
French gray finish. Height 1¾ inches.



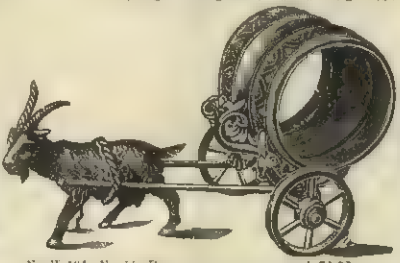
No. B-8 Napkin Ring.....each $2 80
Satin, bright cut engraved, gold lined.
(Illustration is exact size.)

No. W-220 Napkin Ring.....each $2 20
Satin, bright cut engraved, beaded. Height 3¼ inches.

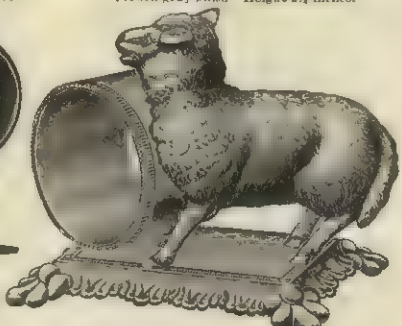


No. W-230 Napkin Ring each $1 85
French gray finish. Height 2¾ inches.

No. B-30 Napkin Ring each $0 60
Satin, bright cut, hand engraved
Height 2¼ inches.



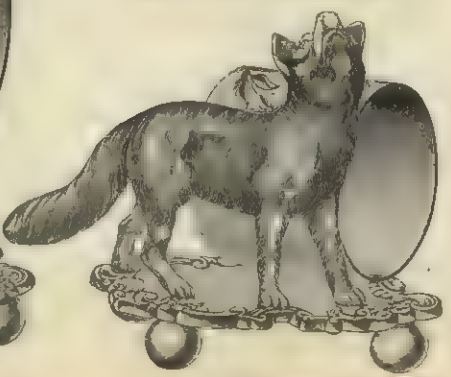
No. W 184 Napkin Ring.....each $2 95
Burnished. Length 4¾ inches, height 2¾ inches.



No. B-13 Napkin Ring.....each $2 40
Chased, gold lined. (Illustration is exact size.)

No. B-8 Napkin Ring.....each $2 40
Satin, bright cut engraved, gold lined.
(Illustration is exact size.)

No. B-10 Napkin Ring.....each $3 20
Satin, bright cut engraved, gold lined.
(Illustration is exact size.)



No. B-9 Napkin Ring.....each $2 90
Satin, bright cut engraved, gold lined
(Illustration is exact size.)

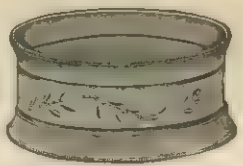
The above prices are subject to the regular discount.

FINE QUALITY QUADRUPLE SILVER PLATED NAPKIN RINGS—GUARANTEED

ALL CUTS FULL SIZE.

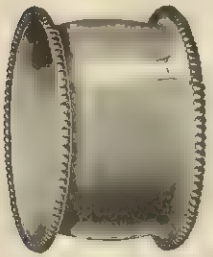
No. B-26 Napkin Ring . . . each, 40c
Plain chased.

No. W 218 Napkin Ring . . . each, $1 25
Satin, bright cut engraved, burnished, beaded

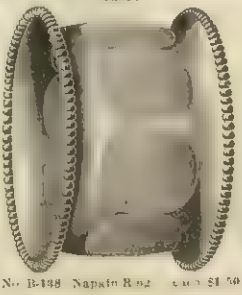


No. W 215 Napkin Ring . . . each, 75c
Satin, bright cut engraved, burnished

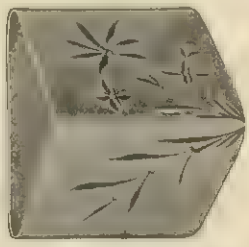
No. B-27 Napkin Ring . . . each 60c
Plain chased.



No. B-137 Napkin Ring . . . each, 95c
Plain, beaded, gold lined.



No. B-138 Napkin Ring . . . each $1 50
Plain, beaded, gold lined.



No. B-130 Napkin Ring . . . each 95c
Satin, bright cut engraved, triangle shape

No. B-113 Napkin Ring . . . each $1 20
Satin, bright cut engraved, gold lined.

No. W 185 Napkin Ring . . . each $1 05
Mother.

No. W-186 Napkin Ring . . . each, $1 05
Father.

No. W-203 Napkin Ring . . . each, $1 25
Satin, bright cut engraved.

No. W-228 Napkin Ring. . . . each, $1 05
French gray, gold lined

No. R-30 Napkin Ring . . . each, $1 55
Burnished, engraved.

No. X-85 Napkin Ring . . . each $1 25
Butler Bush. Floral engraving.

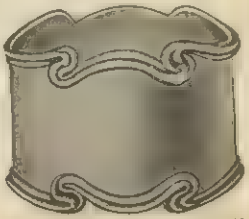
No. R-57 Napkin Ring . . . each, 30c
Fancy chased.

No. R-44 Napkin Ring. . . . . each, 25c
Fancy chased.

No. R-46 Napkin Ring . . . each, 30c
Fancy chased

No. R-72 Napkin Ring . . . each, 45c
Fancy chased

No. R-74 Napkin Ring . . . each 40c
Fancy chased

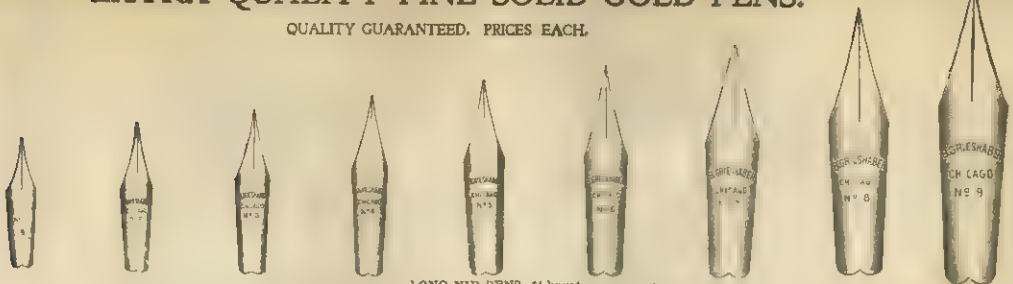


No. W 229 Napkin Ring . . . each $1 85
Burnished, applied border

The above prices are subject to the regular discount.

EXTRA QUALITY FINE SOLID GOLD PENS.

QUALITY GUARANTEED. PRICES EACH.

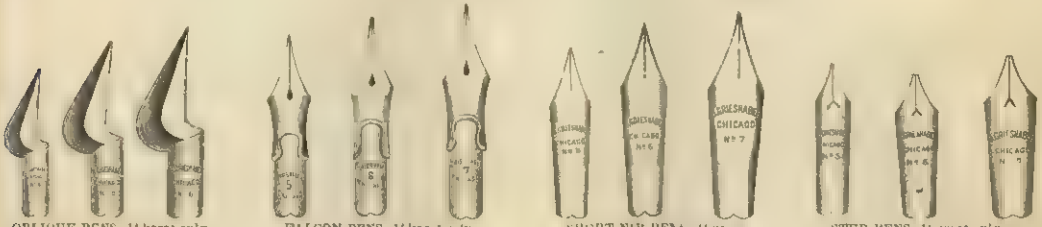


LONG NIB PENS—14 karat.

No. 1....$1 15 | No. 2... $1 50 | No. 3....$1 70 | No. 4....$2 00 | No. 5... $2 35 | No. 6....$3 00 | No. 7....$3 70 | No. 8....$4 70 | No. 9....$6 00

LONG NIB PENS—10 karat

No. 1 .. 90c | No. 2 ...$1 00 | No. 3... $1 15 | No. 4.. $1 35 | No. 5... $1 70 | No. 6... $2 00 | No. 7.. $2 35



OBLIQUE PENS—14 karat only.

No. 4 $3 35 | No. 5 $4 00 | No. 6 $4 70

FALCON PENS—14 karat only

No. 5 $3 00 | No. 6 $3 70 | No. 7 $4 35

SHORT NIB PENS—14 karat

No. 5 $2 35 | No. 6 $3 00 | No. 7 $3 70

STUB PENS—14 karat only.

No. 5 $2 35 | No. 6 $3 00 | No. 7 $3 70

SEAMLESS PENHOLDERS.

WILL WEAR LIKE SOLID GOLD.

GOLD PENS IN SEAMLESS GOLD PLATED EBONY DESK HOLDERS.

		No. 1 Pen	No. 2 Pen	No. 3 Pen	No. 4 Pen	No. 5 Pen	No. 6 Pen	No. 7 Pen	No. 8 Pen	No. 9 Pen	No. 10 Pen
No. 7375	14 karat pens and holders	$1 70	$2 00	$2 35	$2 70	$3 00	$3 70	$4 50	$5 60	$6 95	$7 95
No. 7376	10 karat pens and holders	1 50	1 60	1 80	2 00	2 35	2 70	3 15	95	95	1 80
No. 7377	Holders only	60	60	70	70	70	70	80			

GOLD PENS IN SEAMLESS GOLD PLATED EBONY SLIDE HOLDERS

		No. 1 Pen	No. 2 Pen	No. 3 Pen	No. 4 Pen	No. 5 Pen	No. 6 Pen	No. 7 Pen
No. 7378	14 karat pens and holders	$2 50	$2 70	$3 00	$3 35	$3 70	$4 60	$5 35
No. 7379	10 karat pens and holders	2 10	2 30	2 50	2 70	3 00	3 60	4 00

GOLD PENS IN GOLD PLATED TELESCOPIC HOLDERS.

		No. 3 Pen	No. 4 Pen	No. 5 Pen	No. 6 Pen
No. 7380	14 karat pens and holders	$3 00	$3 35	$3 70	$4 60
No. 7381	10 karat pens and holders	2 50	2 70	3 00	3 60

ENGRAVED BARREL PENS IN EBONY DESK HOLDERS.

No. 7382 14 karat pen No. 7... price each $6 70

No. 7383 14 karat pen No. 5..... " " 4 70

GOLD PENS IN GOLD PLATED CHASED PARAGON PENCIL CASES.

		No. 3 Pen	No. 4 Pen	No. 5 Pen	No. 6 Pen
No. 7384	14 karat pens and cases	$5 70	$6 00	$6 35	$7 35
No. 7385	10 karat pens and cases	5 15	5 35	5 70	6 35
No. 7386	Cases only	4 00	4 00	4 00	4 35

GOLD PENS IN GOLD PLATED OR STERLING SILVER, CHASED, REVERSIBLE POCKET HOLDERS.

		No. 4 Pen	No. 5 Pen
No. 7387	14 karat pens and holders	$4 70	$5 00
No. 7388	10 karat pens and holders	4 00	4 35

The above prices are subject to the regular discount.

FINE SOLID GOLD PENS WITH ASSORTED DESK HOLDERS.

PRICES EACH.

GOLD PENS IN SEAMLESS GOLD-PLATED PEARL DESK HOLDERS.

		No. 1 Pen	No. 2 Pen	No. 3 Pen	No. 4 Pen	No. 5 Pen	No. 6 Pen
No. 7389	14 Karat Pens and Holders	$2 15	$2 70	$3 00	$3 60	$4 15	$5 00
No. 7390	10-Karat Pens and Holders	1 95	2 30	2 50	2 95	3 50	4 00

GOLD PENS IN SEAMLESS GOLD-PLATED RUSTIC PEARL DESK HOLDERS.

		No. 1 Pen	No. 2 Pen	No. 3 Pen	No. 4 Pen	No. 5 Pen	No. 6 Pen
No. 7391	14-Karat Pens and Holders	$2 30	$2 95	$3 35	$4 00	$4 70	$5 35
No. 7392	10-Karat Pens and Holders	2 00	2 50	2 70	3 35	4 00	4 70

GOLD PENS IN SEAMLESS GOLD-PLATED CHASED PEARL DESK HOLDERS.

		No. 1 Pen	No. 2 Pen	No. 3 Pen	No. 4 Pen	No. 5 Pen	No. 6 Pen
No. 7393	14-Karat Pens and Holders	$2 70	$3 30	$3 70	$4 35	$4 80	$5 70
No. 7394	10-Karat Pens and Holders	2 30	2 80	3 15	3 70	4 15	4 70

GOLD PENS IN SEAMLESS GOLD-PLATED CHASED PEARL SLIDE HOLDERS.

		No. 1 Pen	No. 2 Pen	No. 3 Pen	No. 4 Pen	No. 5 Pen	No. 6 Pen
No. 7395	14-Karat Pens and Holders	$3 35	$4 00	$4 60	$5 35	$6 00	$7 00
No. 7396	10-Karat Pens and Holders	3 15	3 80	4 00	4 70	5 35	6 00

GOLD PENS IN SEAMLESS GOLD-PLATED PEARL SLIDE HOLDERS.

		No. 1 Pen	No. 2 Pen	No. 3 Pen	No. 4 Pen	No. 5 Pen	No. 6 Pen
No. 7397	14-Karat Pens and Holders	$2 95	$3 45	$3 70	$4 30	$4 60	$5 30
No. 7398	10-Karat Pens and Holders	2 70	2 95	3 15	3 60	3 95	4 30

GOLD PENS IN SEAMLESS GOLD-PLATED CHASED FANCY CUT PEARL SLIDE HOLDERS.

		No. 1 Pen	No. 2 Pen	No. 3 Pen	No. 4 Pen	No. 5 Pen	No. 6 Pen
No. 7399	14-Karat Pens and Holders	$3 50	$4 15	$4 70	$5 50	$6 30	$7 35
No. 7400	10-Karat Pens and Holders	3 30	3 70	4 15	4 80	5 60	6 35

GOLD PENS IN SEAMLESS GOLD-PLATED CHASED FANCY CUT PEARL DESK HOLDERS.

		No. 1 Pen	No. 2 Pen	No. 3 Pen	No. 4 Pen	No. 5 Pen	No. 6 Pen
No. 7401	14-Karat Pens and Holders	$3 95	$3 50	$4 00	$4 50	$5 00	$5 95
No. 7402	10-Karat Pens and Holders	2 70	3 00	3 50	4 00	4 35	4 95

GOLD PENS IN SEAMLESS GOLD-PLATED CHASED FANCY CARVED COMBINATION PEARL PAPER CUTTER AND PEN HOLDERS.

		No. 1 Pen	No. 2 Pen	No. 3 Pen
No. 7402	14-Karat Pens and Holders	$3 25	$2 90	$4 35
No. 7404	10-Karat Pens and Holders	3 15	3 50	3 80
No. 7405	Holders only, two styles, Stag and Crane	2 30	2 40	2 70

GOLD PENS IN SEAMLESS GOLD PLATED FANCY CUT GOLD BALL AND WIRE PEARL DESK HOLDERS.

		No. 1 Pen	No. 2 Pen	No. 3 Pen
No. 7406	14-Karat Pens and Holders	$3 70	$4 35	$5 00
No. 7407	10-Karat Pens and Holders	3 50	3 90	4 50

GOLD PENS IN SEAMLESS GOLD-PLATED SWELL PEARL DESK HOLDERS.

		No. 1 Pen	No. 2 Pen	No. 3 Pen
No. 7408	14-Karat Pens and Holders	$3 00	$3 70	$4 35
No. 7409	10-Karat Pens and Holders	2 80	3 30	3 80

GOLD PENS IN SEAMLESS GOLD-PLATED SWELL ENAMELED PEARL DESK HOLDERS.

		No. 3 Pen only
No. 7410	14-Karat Pens and Holders	$5 00
No. 7411	10-Karat Pens and Holders	4 50

ENGRAVED BARREL PEN IN PEARL DESK HOLDER.

No. 7412	14-Karat No. 5 Pen. Engraved Barrel Pen in Pearl Desk Holder	$4 70
No. 7413	14-Karat No. 7 Pen. Engraved Barrel Pen in Pearl Desk Holder	9 35

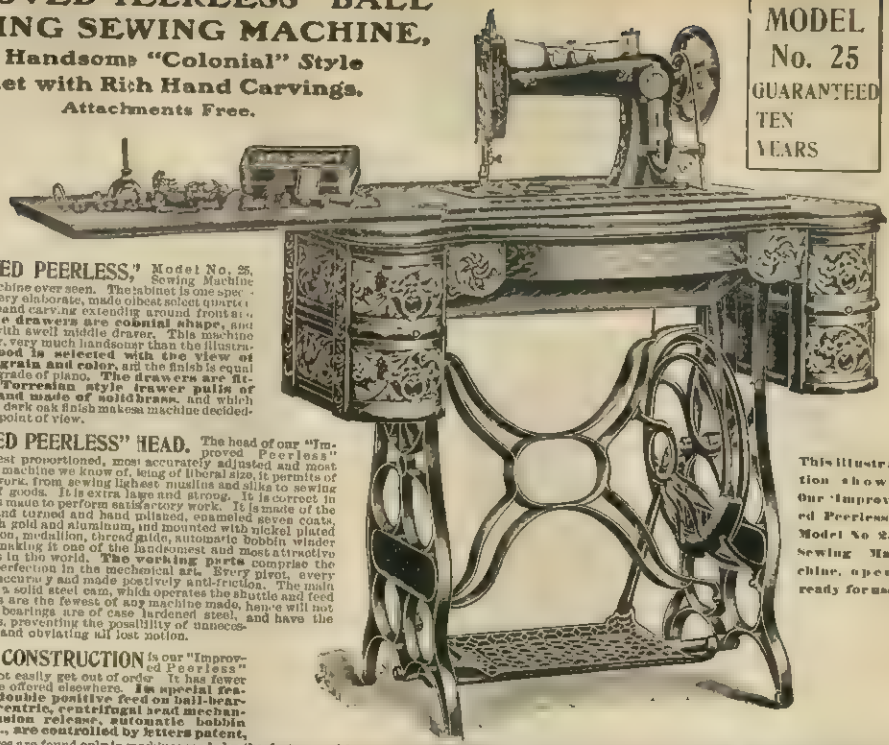
The above prices are subject to the regular discount.

"IMPROVED PEERLESS" BALL BEARING SEWING MACHINE,

Extra Handsome "Colonial" Style Cabinet with Rich Hand Carvings.

Attachments Free.

MODEL No. 25 GUARANTEED TEN YEARS



This illustration shows Our "Improved Peerless" Model No 25 Sewing Machine, open ready for use

OUR "IMPROVED PEERLESS," Model No. 25, Sewing Machine is the handsomest machine ever seen. The cabinet is one specially designed by us, very elaborate, made of best select quarter sawed oak, with rich hand carving extending around front and sides of drawers. **The drawers are colonial shape,** and the table serpentine with swell middle drawer. This machine is extra fine appearing, very much handsomer than the illustration shows. **The wood is selected with the view of uniformity in the grain and color,** and the finish is equal to that of the highest grade of piano. **The drawers are fitted with special Torresian style drawer pulls of handsome design and made of solid brass,** and which in connection with the dark oak finish makes a machine decidedly handsome in every point of view.

OUR "IMPROVED PEERLESS" HEAD. The head of our "Improved Peerless" machines is the neatest proportioned, most accurately adjusted and most handsome head of any machine we know of, being of liberal size, it permits of a very wide range of work, from sewing light cest muslins and silks to sewing of the very heaviest of goods. It is extra large and strong. It is correct in shape and make, and is made to perform satisfactory work. It is made of the best southern iron, hand turned and hand polished, enameled seven coats, richly ornamented with gold and aluminum, and mounted with nickel plated steel hand wheel, tension, medallion, thread guide, automatic bobbin winder and stitch regulator, making it one of the handsomest and most attractive sewing machine heads in the world. **The working parts** comprise the results of the latest perfection in the mechanical art. Every pivot, every bearing is fitted with accuracy and made positively anti-friction. The main shaft is equipped with a solid steel cam, which operates the shuttle and feed mechanism. The parts are the fewest of any machine made, hence will not get out of order. All bearings are of case hardened steel, and have the latest take-up features, preventing the possibility of unnecessary rattling or noise, and obviating all lost motion.

SO SIMPLE IN CONSTRUCTION is our "Improved Peerless" Machine that it will not easily get out of order. It has fewer parts than any machine offered elsewhere. **Its special features, such as the double positive feed on ball-bearings; its double eccentric, centrifugal head mechanism, automatic tension release, automatic bobbin winding device, etc., are controlled by letters patent,** and these special features are found only in machines made by the factory making our "Improved Peerless." **As we practically control the entire output of the factory,** it is proper that we should say that no other machines will compare with ours either in working quality, ease of motion, simplicity, durability, reliability, speed, strength or beauty. We can furnish a machine for every variety of sewing, but perfection in work will always present. **Our machines stand in the highest class, a class of their own.**

This illustration shows our "Improved Peerless" Model No. 25 with cabinet closed.

THE STRONG, DURABLE IRON STAND used in the "Improved Peerless" is made of the very best iron, in beautiful scroll design, handsomely japanned, smoothly finished and strongly braced, **ball-bearing treadle and band-wheel bearings.** The ball-bearing features of this machine are perfect in every detail. Balls work in a steel groove, just like regular bicycle ball bearings, and make the lightest running, smoothest running and most satisfactory in operative qualities imaginable.

THE MECHANISM IS OF THE HIGHEST CLASS,

All bearings are of the best case-hardened steel, accurately adjusted and fitted to obviate any friction in its parts, and in such a way that the machine is easily run and as near noiseless as a machine can be.

THE NEEDLE is self setting, and having a large shank and short blade it is not easily broken. The scale plate, regulating the number of stitches to an inch, is accurate and the best device of its kind. The stitch regulator is on the front of arm, where it does not interfere with the operator, but being in plain view is easily regulated without unnecessary annoyance.

THE LATEST IMPROVED BOBBIN WINDER possessing special features not to be found on any other machine, is used in our machine. It is the best perfect bobbin winder ever made. Its use winds the bobbin smoothly, evenly and regularly, without running the machine. The patent guide prevents the thread from winding over itself, and the bobbin fills evenly from end to end, putting more thread on the bobbin than can be put on by any other process.

THE FEED is operated on Ball Bearings, is controlled by the latest patent eccentric movement, and is absolutely positive, strong, durable and effective, and the most perfect feed on the market. No species to get loose or break. A positive feed, and as we have before said—

THE SHUTTLE is perfect in form and shape, made of best steel, is **self-threading, thread through,** no set screw to come out, easy to take out or put in. **No holes to** perfect shuttle in the world. May be removed from the machine by the simple use of the hand; it is so simple that even a child can do it. Perfectly self-threading, correct and without interruption. The bobbin is easily regulated without removal of the shuttle from the machine, hence a saving of time and no trouble and annoyance will be experienced.

ACCESSORIES ARE FURNISHED FREE.

Style No. 25. List Price - - - $53 90

This machine sent on approval, if so desired, C. O. D. by freight on receipt of $5.00 as a guarantee of good faith, which amount will be deducted from bill.

The above prices are subject to the regular discount.

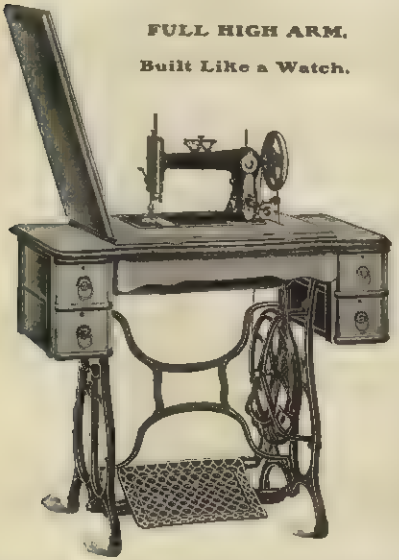
Our Peerless Sewing Machines

are also made to meet the popular demand for a class of people wanting a good reliable and up-to-date sewing machine for a little money—and even though they are made exceedingly plain in woodwork, the construction and mechanism is identically the same as our higher priced ones.

All Full High Arm. Certificate of Guarantee for 10 years accompanies each machine.

FULL HIGH ARM.

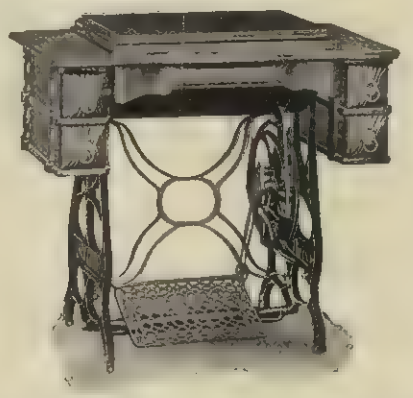
Built Like a Watch.



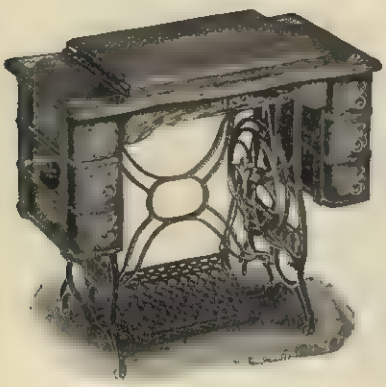
5 drawer, drop-head cabinet (oak). Made with ordinary pivot-bearing stand. Full set of attachments furnished. A good reliable low-priced machine.
Style No. 26.....List Price, $41 10

FULL HIGH ARM.

Built Like a Watch.



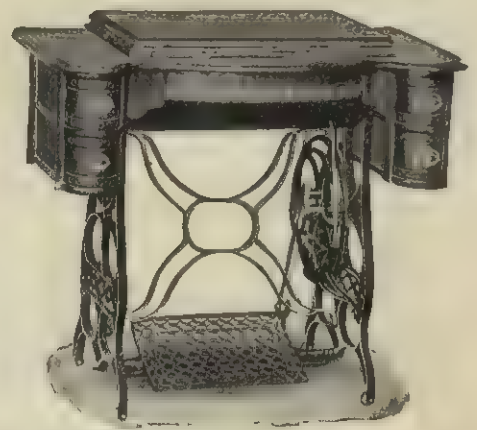
9-drawer, drop-head cabinet (oak). Carved front, drop-head stand. Oak, extra finish. The needle is straight, with an enlarged shank, flattened on one side so that the operation of setting the needle is absolutely positive, and the needle when once set is securely fastened by our special clamping device, which enables the needle to be readily removed in an instant when required.
Style No. 20.....List Price, $46 75



7-drawer, drop-head, marquetry finished. Wood work as shown in cut. Finished in rich golden oak. Beautifully decorated. Marquetry case highly polished.
HEAD: Extra fine finish and ornaments.
STAND: Ball-bearing nickeled casters.
Style No. 8½.....List Price, $49 50

Oak Case, Colonial Swell Front

Table and Drawer Cases.

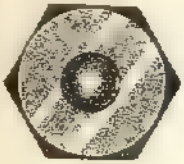


5-drawer, drop-head, Colonial woodwork, as shown in cut. Finished in rich golden oak. Case highly polished.
HEAD: Extra fine finish and ornamented.
STAND: Ball-bearing nickled casters.
Style No. 24.....List Price, $50 85

Any of the above machines sent on approval if so desired C. O. D. by freight on receipt of $5.00 as a guarantee of good faith, which amount will be deducted from bill.

The above prices are subject to the regular discount.

GO WITH AND



With a GENUINE COES wrench you can tighten or loosen the most stubborn nut with comparative ease.

There is a style and size for every wrench purpose.

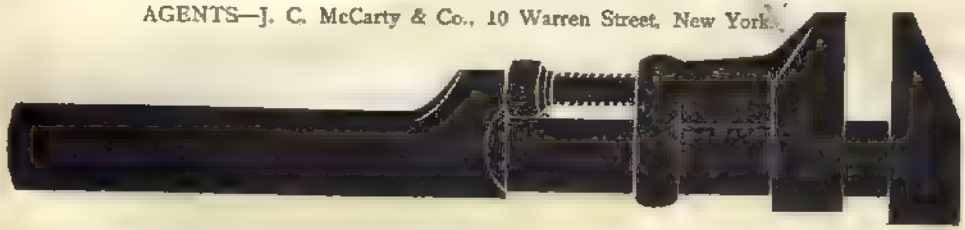
A GENUINE COES will not chew the corners off a nut, making it necessary to resort to hammer and chisel, but will take a clean hold, and turn it without marring.

The man who has "bumped" a stiff wrench problem, with a "near-Coes," in his sturdy right, is the man who will appreciate the real COES.

The man who has not "bumped" yet, will side-step a lot of trouble by buying the wrench with the star ★ trade mark, NOW.

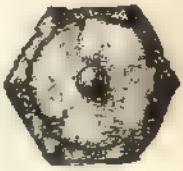
COES WRENCH COMPANY

AGENTS—J. C. McCarty & Co., 10 Warren Street, New York.



E S

WITHOUT



Without a Coes Wrench, you are "playing with fire," so to speak. You are constantly welcoming wrench troubles which you will not be able to meet

There are many imitations, which almost "look the part" The fake gold-brick is just as bright and shiny as the real thing.

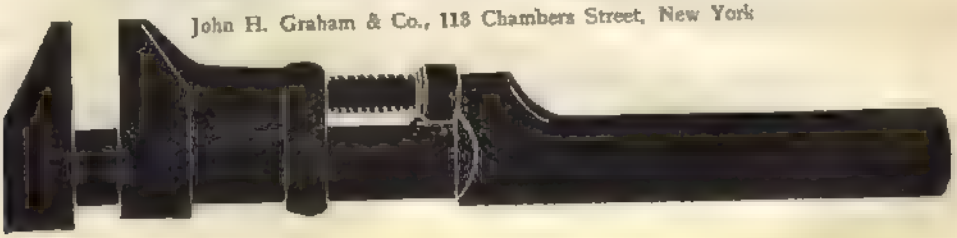
It pays in the end to buy a GENUINE COES in the beginning. The star ★ trade mark is a guide to the wrench you need. It is the mark of quality.

The GENUINE COES is made of steel castings, hardened by our special process, and is 30 per cent. stronger than any imitation.

Send for the Wrench Book.

WORCESTER, MASS., U. S. A.

John H. Graham & Co., 118 Chambers Street, New York



WE HAVE SAID A GOOD DEAL

about the SIMPLICITY, EFFICIENCY and CONVENIENCE of the

HOLLEY 1908 MAGNETO

Now for its RELIABILITY!

ADDRESS ALL COMMUNICATIONS TO THE COMPANY

Ford Motor Company

AUTOMOBILE MANUFACTURERS.

WORKS & OFFICE
COR. PIQUETTE & BEAUBIEN STS

HENRY FORD, PRESIDENT
JOHN F. DODGE, VICE PRES'T
JAMES COUZENS, SEC'Y & TREAS

Detroit, Michigan.

ADDRESS REPLY TO
MANUFACTURING DEPARTMENT

June 24, 1907.

Holley Bros.,

Detroit, Mich.

Gentlemen:

Our Ford, six-cylinder car, which won the 24 hour race Saturday, breaking all world's records, was equipped with the Holley Magneto. During the entire race it gave no trouble of any nature and we obtained uniformly satisfactory results.

Yours truly,

FORD MOTOR COMPANY.

Henry Ford
President.

In other words, the Ford car which won the memorable 24-hour race in Detroit, on June 22, was equipped with the Holley High Tension Ignition System. During the entire race the magneto was constantly working. THE BATTERY WAS NEVER USED, and the magneto was not repaired or adjusted in any manner whatever. Several of the contesting cars carried foreign makes of magnetos.

The Holley Magneto with separate Distributor and Timer affords a dual ignition system with practically none of the expense and complications of any other system. It is so much better than anything else of its kind that no owner of a four or six cylinder car can afford to be without it.

HOLLEY BROTHERS COMPANY

DETROIT, MICHIGAN

See That Your A Genuine COES

for you will never have to buy another in a lifetime unless it is stolen or lost, for GENUINE COES WRENCHES are made upon honor and last for all time. The price argument does not exist, because, while the quality is 30 per cent. higher, the cost is but 5 per cent. more, and if this 5 per cent. stands in your way, you are practising false economy to the extent of 25 per cent. Don't let any salesman, for the sake of a larger profit for himself, endeavor to induce you to buy "just-as-good as-a-Coes," or a "Coes-pattern" or a "better-and-cheaper(?)-than a-Coes," or anything that is a substitute, for the COES WRENCH is of known quality, and to the well-informed buyer there is no substitute at any price.

Remember, we have been making COES WRENCHES for seventy years, and we have learned how to make them right in two generations

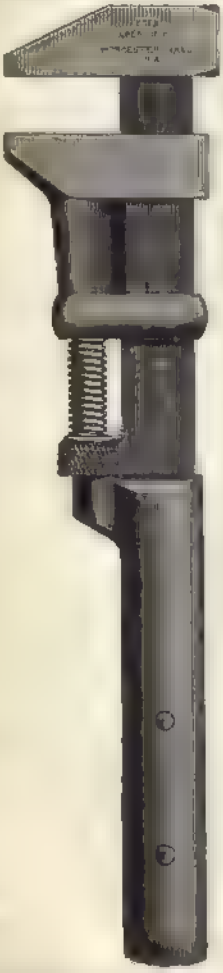
COES WRENCHES are made in five styles and forty-nine sizes, which range from 4 to 48 inches,—one or more of them will meet your wrench needs. They are made with very few parts, and are put together to last. They can be carelessly handled without being injured. This is a test which other wrenches cannot pass satisfactorily.

WRITE FOR OUR WRENCH BOOK.

Coes Wrench Com

Outfit Contains WRENCH

Where other wrenches fail, COES WRENCHES have demonstrated their superiority. We are now selling to the largest automobile manufacturers, jobbers, and dealers, but we would like to add every reliable firm to our list as we know that the COES WRENCH will replace in value received to the purchaser many cast iron fork wrenches and many other special wrenches of various sizes.



If you run a Garage or make or own an Auto, you need these wrenches.

The Key Model

(Right Cut)

28 in. and 36 in long, largest nut wrench made; strong, unbreakable, handy and cheap.

The 91 Steel Handle

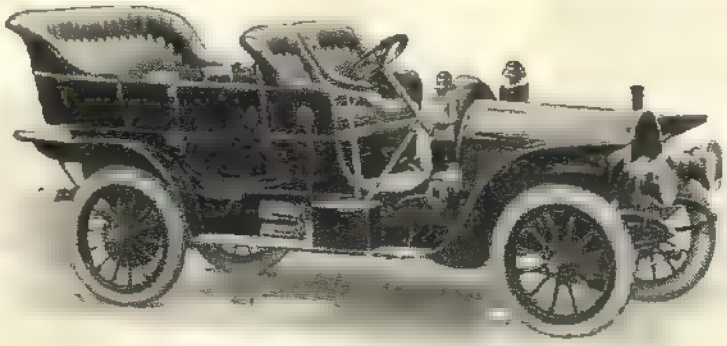
(Left Cut)

in seven sizes—from 4 in. to 21 in. Heat, damp and wear proof. Steel handle 30 per cent. stronger, size for size than any imitation or substitute.

Now is the time the automobilist should be careful to get the right wrench for his tool-kit. Don't fuss and fume all summer because your wrench won't stand abuse. Start the season right, and get a COES without delay. If your dealer hasn't it, give us his name and address, and we will see that you get the GENUINE COES.

pany Worcester, Mass.

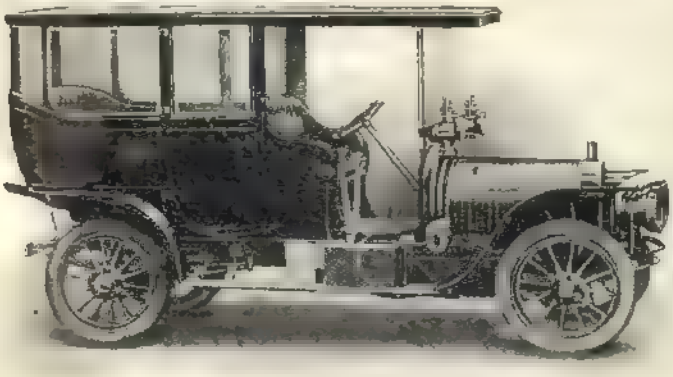
ROYAL TOURIST



1907 MODEL G—SERIES 2

Touring Car, $4,000 **Limousine, $5,000**

Both Seven Passenger and Forty five Horse-power.



Royal Double Ignition System—Royal Carburetor—Royal Fenders—Royal Advanced Improvements.

Our second edition catalogues contain reproductions of photos of all cars and parts with blue prints of every Royal detail. Send for it and learn what is essential to a perfect car.

THE ROYAL MOTOR CAR CO.

CLEVELAND, O.

Member A. L. A. M.

We have some territory still open for reliable agents.

The Bay State 40

HUGH DOLNAR.

The Bay State Auto Company, 112 Norway street, Boston, Mass., U. S. A., a Massachusetts corporation, organized in January, 1906, had its first car on the road in January, 1907.

The Bay State Company was promoted by its present General Manager, Rossell Drisko, who has been prominent in the Boston automobile trade for the past six years.

much greater distance had the weather permitted. The car has always carried heavy loads and been driven without mercy with absolutely no repairs and only one substitution, that of a steel drop forged front axle for the Parsons bronze casting first used. Mr. Drisko is an expert driver, and the control of the Bay State 40 was designed in accordance with his suggestions, and as

Fig. 1. The Bay State 40. Wheel base 122 in., gauge 56 in., tires 34x4 in. rear, 34x4 front. Motor, four vertical 4-cycle water-cooled cylinders, 4½x5 in., and can give 40 H. P. on the road. The progressive selective change gear gives three forward speeds and a reverse, with bevel gear drive to the floating divided rear axle. Tourabout body, side doors swinging to front, two folding seats to face all seven passengers forward. Weight, 3000 lbs. Price, $3750.00, including mats, horn, tools and 5 lamps, all ready for extended touring. Cape top in $175.00 extra.

This new car, the "Bay State 40," was designed by Mr. George Temple, of Boston, who has had an extensive experience in practical motor car work, and has shown in this first car of his own production that he is

might be expected, is very simple, convenient and wholly reliable.

It is not an extremely light car, its weight being 2900 pounds empty, and about 3100 pounds with everything on. The first car

Fig. 2. Bay State 40 chassis, right side elevation.

well aware of the importance of supporting the chassis loads in the very best manner, for both strength and stability, and has made a full three-point support of the long sub-frame which carries the motor and gearbox of the Bay State 40, the prominent feature of the chassis of this powerful and remarkably easy riding seven-passenger touring car. This car has now been driven about 4000 miles, and would have been driven a

was geared 3½ to 1, and has more than enough hill climbing capacity for Boston service, hence the regular Bay State 40 gear will be 3 to 1, giving plenty of speed and taking all ordinary hills without gear changing. This car is very still, is prompt in responding to control action, and is notable for its easy body movements, due directly to the three-point sub-frame support, which has range enough to permit lifting one rear

wheel 20 inches without disturbing the sub-frame and its load. This frame carries the weight of the motor and gear box very low, making for steadiness.

NOTABLE FEATURES.

The first and most important variation from ordinary construction is the three-point support of the sub frame, which is fixt forward to the front cross-girt of the chassis frame, 3 ins. in rear of the front axle. The sub frame sides are an inverted L section 2 ½ ins. deep by 1¾ ins. wide. The motor and gear-box sit on top of the sub-frame sides, which are placed 17¾ ins. apart, and 20¾ ins. over all. The sub-frame top is dropt 6 ins. below the top of the chassis frame. This sub-frame is about 75 ins. long, and its rear end is supported on a globe joint, comprised of a globe end stud fixt to the sub-frame cross-girt, dropt 11 ins. below the chassis frame top, and a cant globe box with an oiler, fixt to the sub frame rear cross-girt. This globe support of the rear end of the sub-frame gives it the less motion due to the rise or fall of the rear wheels, that it would have if the sub-frame were rigidly fixt at its rear end to a rigid cross-girt, and wholly avoids twisting of the sub-frame, and also lessens the side-sway.

A brake drum 3 ins. diameter is placed on the line-shaft in front of the gear-box, and coacts with a cam-constricted, leather-lined, steel brake-band. The end-cam which applies this brake is mounted on a rocker which is linkt to the clutch disengaging fork rocker, so that after the clutch is disengaged by pedal action continued pedal movement applies the band to this small diameter line shaft brake and so stops the change gears at once.

The motor-base lugs and the gear-box rest on top of the sub frame and are bolted down thru blocks finished to fit the inside of the sub frame members.

Fig. 4. Bay State 40 front end system, showing front sub frame and front spring planing.

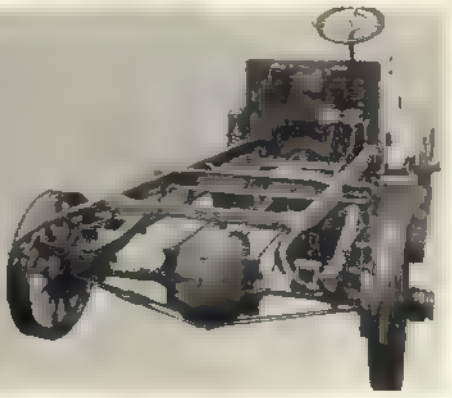


Fig. 4. Bay State 40 rear axle and rear spring planing and rear support of the two tubular torque resisting arms, trussed and brake drum. All frames are Gandy belting faced.

Fig. 5. Bay State 40 right side of motor in chassis, showing special carburetor.

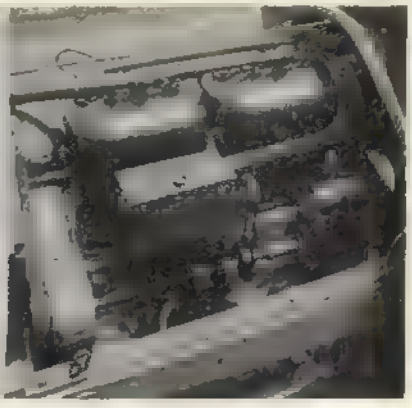


Fig. 6. Left hand side of Bay State 40 motor in chassis, showing clutch, clutch operating and gear driven pump and magneto shaft, plug wire casing and water delivery pipe and radiator.

CHANGE GEAR.

The change gear is of the progressive shift type, gears all steel and hardened, and all except the reversing intermediated gear are on annular ball bearings.

The front wheels, rear wheels and balance gear are also on annular ball bearings.

The clutch is 5 disks, with toggle joints

and temper screws, and requires only a very light spring, about 20 pounds tension

A cushioned drive, consisting of two arms 180 degrees apart, fixt to the clutch shaft and two other arms 180 degrees apart which turn with the line shaft, have 4 segments of soft rubber between the arms to cushion the drive from the motor to the line-shaft.

CARBURETOR.

The carburetor is a special design by Mr. Temple, and has a float chamber and a stand pipe which is surrounded by a sleeve of fixt diameter and having air ports outside of it, which can be opened more or less by a votating sleeve-valve, so as to admit to the intake air which does not touch the stand pipe. An automatic valve is opened by the piston suction against spring tension, and has a sleeve-valve which can be made to admit more or less air to the automatic valve intake; this adjustment is made by trial, and permanently retained by a screw.

No struts are fitted, but two double torsion arms are placed, one at each end of the gear housing, the front ends of each arm are brought together, with globe ends between cup washers and coiled springs in the cross girt brackets. The universal joints are by the Hartford Company.

THE AXLES

These are by the Standard Roller Bearing Co., Philadelphia, and all wheels are on annular ball bearings. The rear axle gear housing is a steel casting made of sufficient size to take a large bevel gear to give a high reduction ratio without change of gear box. The gear box has two substantial truss rods underneath, and a triangular torsion resisting arm fitted to each end of the gear housing. The torsion arm is very often

riding comfort.

SPRINGS

These are all half-elliptics, jointed in front, all linked in the rear, and are 1¾ ins wide in front and 2 ins. wide in the rear The front springs have 8 leaves 40 ins. long, tongued and grooved, not banded, and all leaves polished all over, and perched 16 inches, front spring eye to middle of front axle.

Fig 7. Bay State 40 control linkages and globe joint sub frame rear end support, with the small line drake and the cushioned line shaft drive.

The rear springs are 56 ins. long, 10 leaves, not banded, the top leaf and next one below being bent over together to form the pin eyes. The rear springs are perched

Fig 8 Bay State 40, details of globe-joint support of the rear end of the sub-frame

omitted entirely, and this is the first instance noted by the writer in which two torsion arms are fitted, and perhaps these have something to do with the very smooth and easy riding qualities of this machine. The springs are very long in the rear, and are perched far out from the center, another feature which probably adds to the

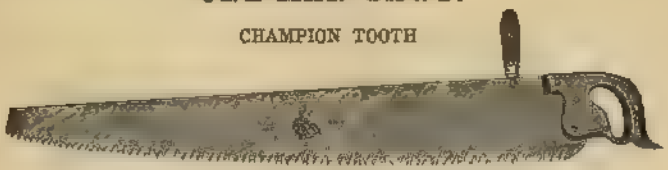
26 ins. from the forward spring eye to the middle of the rear axle. Both the front and rear springs are perched out of the middle, the front ones 4 ins., and the rear ones 2 ins. out, giving unusual ease and smoothness or riding.

THE CHASSIS FRAME.

This is prest steel, one width, 34 ins. from

ONE-MAN SAWS.

CHAMPION TOOTH

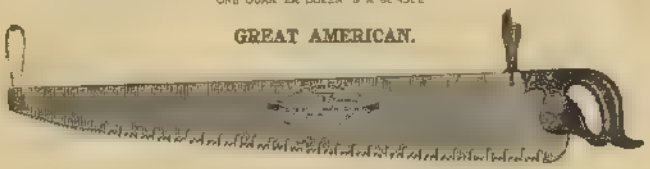


Cast Steel, Polished, with Supplementary Handle.

No. 21. Feet,	2½	3	3½	4	4½	5
Weight,	3	3½	4	5½	6	6½ lbs
Ajax, each	$2.25	2.60	3.00	3.35	3.70	
Disston's, "	2.25	2.60	3.00	3.35	3.70	

ONE QUARTER DOZEN IN A BUNDLE

GREAT AMERICAN.



Disston's, Cast Steel, Polished, with Supplementary Handle.

No. 28—Feet,	3	3½	4	4½	5
Weight,	3	4½	5½	6	7½ lbs
Each,	$2.65	2.75	3.25	3.65	4.10

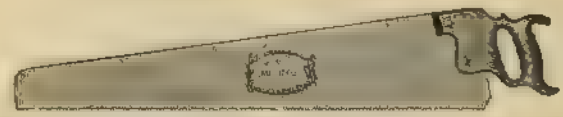
ONE QUARTER DOZEN IN A BUNDLE

CROSS-CUT SAW HANDLES.

No. 010. No. 6. No. 8. No. 3. No. 1.

No. 010—ATKINS malleable loop, short malleable ferrule, pla[illegible] handle, weight per pair 1¼ lbs., per pair $0.20
No. 6—ATKINS malleable loop, short malleable ferrule, varnished handle, weight per pair 1 [illegible] lbs " .24
No. 8—ATKINS malleable loop, extra heavy long malleable ferrule, varnished handle, weight per pair 2¼ lbs., " .30
No. 3—ATKINS heavy malleable loop, long malleable ferrule, varnished handle, weight per pair 1¾ lbs., " .36
No. 1—ATKINS, wrought loop, extra heavy long malleable ferrule, varnished handle, weight per pair 2¼ lbs., " .45

HAND AND RIP SAWS.



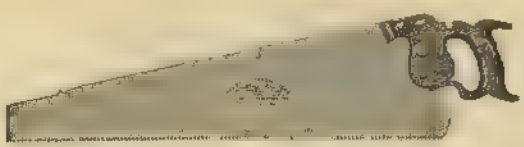
No. 50. 26 in. SAM SICKLES', hand, cast steel, beech handle, polished edge, 4 screws, 5, 6, 7 and 8 points, weight per dozen 2 lbs. per dozen, $8.00

HALF DOZEN IN A BOX.

No. 80. 26 in. WM. [illegible] hand cast steel grained blade, etched, skew back, polished beech handle, 4 screws, 5, 6, 7, 8, 9, 10, 11 and 12 points, weight per dozen 22 lbs., per dozen $12 00

No. 80. 26 in. WM. [illegible] rip cast steel grained blade, etched, skew back, polished beech handle, 4 screws, 4, 4½, 5, 5½ and 6 points, weight per dozen 27 lbs., per dozen 16 00

ONE THIRD DOZEN IN A BOX.

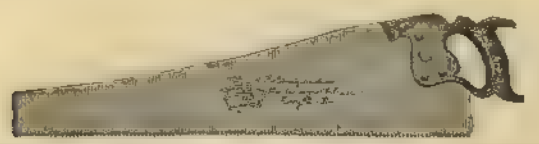


No. 7—26 in. DISSTON'S, hand, cast steel, grained blade, thin back, etched, beech handle, polished edge, 4 improved screws, 5, 6, 7, 8, 9, 10, 11 and 12 points, weight per dozen 24 lbs., per dozen $20 00

No. 7—26 in. DISSTON'S, hand, otherwise same as above, 6, 7 and 8 points, weight per dozen 30 lbs., 2, 50

No. 7—26 in. DISSTON'S, rip, cast steel, grained blade, etched, beech handle, polished edge, 4 improved screws, 4, 4½, 5, 5½ and 6 points, weight per dozen 30 lbs., per dozen 23 50

ONE THIRD DOZEN IN A BOX.



No. D8—26 in. DISSTON'S, hand, cast steel, grained blade, etched, skew back, apple handle, polished edge, 5 improved screws, 6, 7, 8, 9, 10, 11 and 12 points, weight per dozen 24 lbs., per dozen $22 50

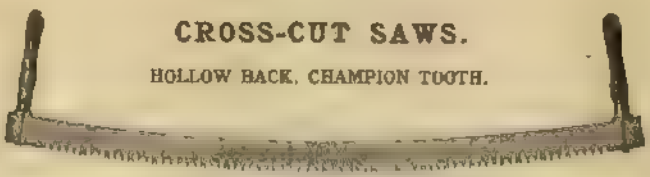
No. D8. 26 in. DISSTON'S, rip, cast steel, grained blade, skew back, apple handle, polished edge, 5 improved screws, 5, 5½ and 6 points, weight per dozen 27 lbs., per dozen 22.00

No. D8—26 in. DISSTON'S, rip, otherwise same as above, 4, 4½, 5, 5½ and 6 points, weight per dozen 30 lbs., 25.00

ONE THIRD DOZEN IN A BOX.

CROSS-CUT SAWS.

HOLLOW BACK, CHAMPION TOOTH.



Ajax, Cast Steel, Polished, without Handles.

No. 7—Feet,	5	5½	6	6½
Weight,	3½	4¼	4¾	5 lbs
Each,	$1.80	1.98	2.16	2.34

Disston's, Cast Steel, Polished, without Handles.

No. 8—Feet,	5	5½	6	6½
Weight,	3½	4	4½	5 lbs.
Each,	$1.80	1.98	2.16	2.34

CHAMPION TOOTH

Ajax, Cast Steel, Polished, Thin Back, Graduated from 14 to 16 Gauge, without Handles.

No. 9—Feet,	5	5½	6	6½	7
Weight,	7¼	8	8½	9	9½ lbs.
Each,	$2.70	2.97	3.24	3.51	3.78

Disston's, Cast Steel, Polished, Thin Back, Graduated from 14 to 16 Gauge, without Handles.

No. 2—Feet,	4½	5	5½	6	6½	7
Weight,	5½	6½	7	8	9½	10½ lbs.
Each,	$2.43	2.70	2.97	3.24	3.51	3.78

Disston's, Cast Steel, Polished, Extra Thin Back, Graduated from 14 to 18 Gauge, without Handles.

No. 1—Feet,	4	4½	5	5½	6	6½	7
Weight,	4½	4¾	5½	6½	7	7½	8½ lbs.
Each,	$2.40	2.70	3.00	3.30	3.60	3.90	4.20

TUTTLE TOOTH

Disston's, Spring Steel, Extra Thin Back, Graduated from 14 to 19 Gauge, without Handles.

No. 3—Feet,	5	5½	6	6½	7
Weight	4	5	6¼	7¼	7½ lbs.
Each,	$3.00	3.30	3.60	3.90	4.20

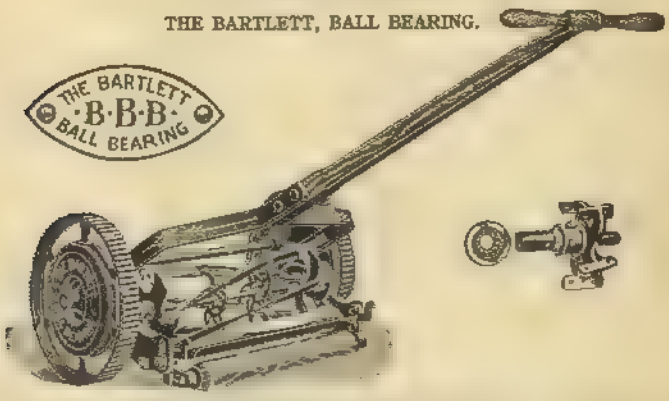
COMMON TOOTH

Disston's, Cast Steel, Patent Ground, without Handles.

No. 6—Feet,	4	4½	5	5½	6
Weight,	4½	5	5½	6½	7 lbs.
Each,	$2.32	2.61	2.90	3.19	3.48

LAWN MOWERS.

THE BARTLETT, BALL BEARING.



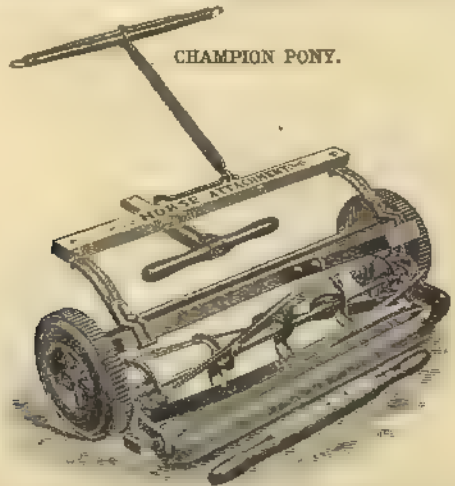
10 Inch Driving Wheels, 6 Inch Reel, Five Solid Cast Steel Cutting Knives, Two Center Braces, High Speed Reel, Bicycle Ball Bearings, Easily Adjusted.

Cut,	15	17	■	21 in.
Weigh	6	44	48	72 lbs.
Each.	$23.00	25.00	27 00	29 90

The dust proof ball bearings are exactly the same as are used in high grade bicycles and the adjustment is easily made. The mower makes hardly any noise, as were some one should tell you. The wheels are high and light. The reel is very rigid each cutting knife being held firmly in position at four points. With the handle raised the reel may be turned very easily, as the gearing is over a high center. The mower is beautifully decorated in gold and bright red and striped. This machine is a cutting self pushing greens, and is as good a mower as can be made.

ONE IN A CASE.

CHAMPION PONY.



10 Inch Driving Wheels, 6¾ Inch Open Cylinder, Three Tempered Steel Blades, High Speed Reel, Double Drive, Positive Ratchet.

20 Inch Cut, wt 100 lbs. . . . . each $30 00

ONE IN A CASE.

PHILADELPHIA LAWN MOWERS.

STYLE A, HIGH WHEEL.

10 Inch Driving Wheels, Four Blades, All Steel, 6½ Inch Open Cylinder.

Cut,	15	17	19	21 in.
Weight,	40	42	44	46 lbs
Each,	$25 00	28 00	3 .00	34.00

Gears metal of steel throughout, reducing weight one half. The style A differed from others, it having a train of three gears, instead of single pinion gear.

ONE IN A CASE.

STYLE K, HIGH WHEEL.

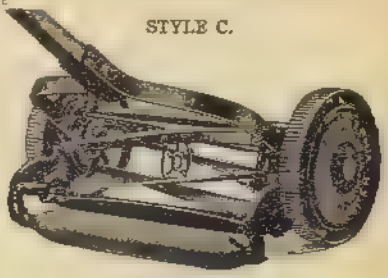
10 Inch Driving Wheels, Five Blades, Open Cylinder.

Cut,	14	16	18	20 in.
Weight,	45	48	5.	54 lbs
Each,	$20 00	22 00	24 00	26 00

In the five blade K mower there is one single pinion gear and the five knife bearers flow with it. It is made a correct proportion throughout for a trifle more than other Philadelphia mowers, but lighter and smoother and will cut high grass as any mower made.

ONE IN A CASE.

STYLE C.

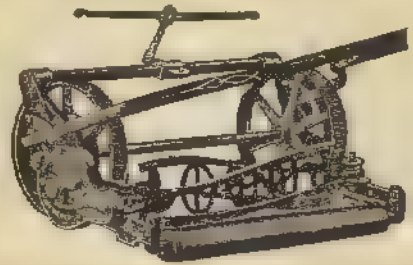


8¼ Inch Driving Wheels, Four Blades, 5¾ Inch Cylinder, Single Pinion, Geared on Both Sides

Cut,	14	16	18	20 in
Weight,	38	40	42	44 lbs.
Each,	$17 00	19 00	21 00	23 00

ONE IN A CASE.

PHILADELPHIA, PONY OR TWO-MAN.

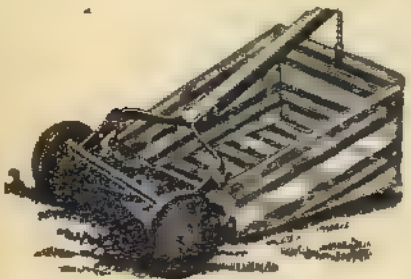


12 Inch Driving Wheels, 6¾ Inch Open Cylinder, Four Blades Riveted on Spider.

25 in. cut, weight 150 lbs., each $50.00

ONE IN A CASE.

GRASS COLLECTORS.



Nos. 1, 2 and 3

Nos. 4 and 5.

No. 1— FEEDER S, standard size adjustable for 4 to 6 in. mowers, heavy wire frame, canvas bag, weight per dozen 22 lbs. per dozen $ 3.00
No. 2— FEEDER S, for high wheel mowers, adjustable for 14 to 18 in. mowers, heavy wire frame, canvas bag, weight per dozen 32 lbs. per dozen, 9.00
No. 3— EUREKA, shallow heavy wire frame adjustable for 14 to 18 in. mowers, canvas bag, weight per dozen 20 lbs. per dozen 9.00
No. 4— IDEAL, galvanized iron bottom, adjustable for 12 to 21 in. mowers, length 20 in., 2 malleable iron clamps, easily attached and detached, weight per dozen 48 lbs., per dozen 24.00
No. 5— IDEAL, galvanized iron bottom, adjustable for 18 to 21 in. mowers, length 25 in., 2 malleable iron clamps, easily attached and detached, weight per dozen 57 lbs., per dozen 30.00

GRASS SWEEPERS.

APOLLO.

For Factory Shipment Only

15 Inch Malleable Iron Driving Wheels, Enameled Aluminum Bronze, Grass Pan Painted Vermilion.

Sweeps,	20	24	28 in.
Weight,	65	70	75 lbs.
Each	$12.50	13.75	15.00

A small lever at the right side of the machine allows the brush reel to be adjusted to any desired height and takes up wear. The reel is hung on links in such a manner that it may raise automatically to pass over a large stone or obstruction without injury. The brush-heads will wear for years and are easily and cheaply replaced if worn out or broken.

LAWN ROLLERS.

Cast Iron Sections, Smooth Face, Steel Braces, Braced Wood Handles.

Nos.	4	5	6	7	8
Weight,	250	250	300	350	400 lbs.
Number of sections,	2	1	3	2	3
Diameter,	20	20	20	24	24 in.
Width	20	20	24	20	20 in.
Each	$ 5.50	15.50	18.50	18.50	21.50

Nos.	9	10	11	12
Weight	450	500	500	600 lbs.
Number of sections	3	3	3	3
Diameter,	24	24	28	28 in.
Width	24	30	24	30 in.
Each,	$24.50	27.50	27.50	30.50
Extra Weights, 50, 100 or 150 lbs.,				per pound $0.05

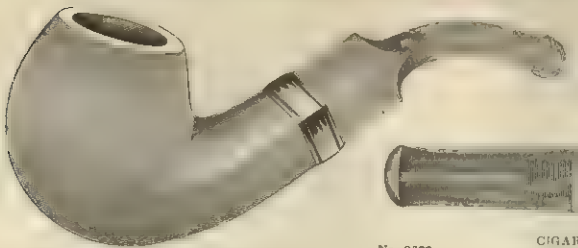
We can furnish axle rollers to weigh 50, 100 or 150 lbs. more than the weights given by the addition of weights attached to the axle, for which add 6 cents per pound. The extra weights are subject to same trade discount as the rollers.

FINEST QUALITY GENUINE MEERSCHAUM PIPES, CIGAR AND CIGARETTE HOLDERS

Fine Selected Genuine Amber Stems. Put up in Fine Plush Lined Leather and Chamois Cases.

Cuts are Exact Size.

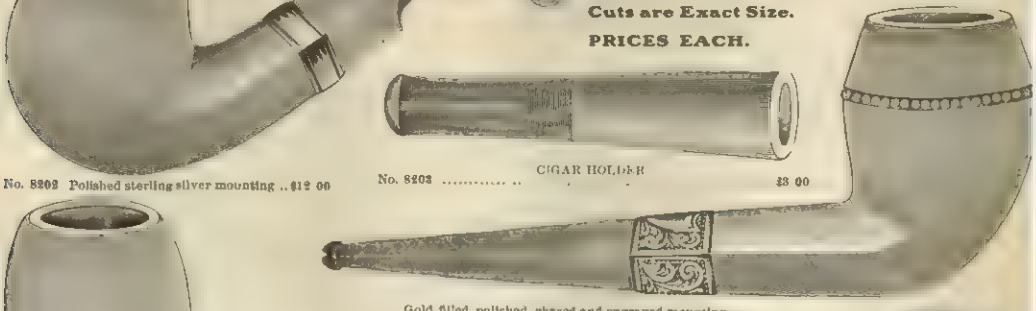
PRICES EACH.



No. 8202 Polished sterling silver mounting .. $12 00

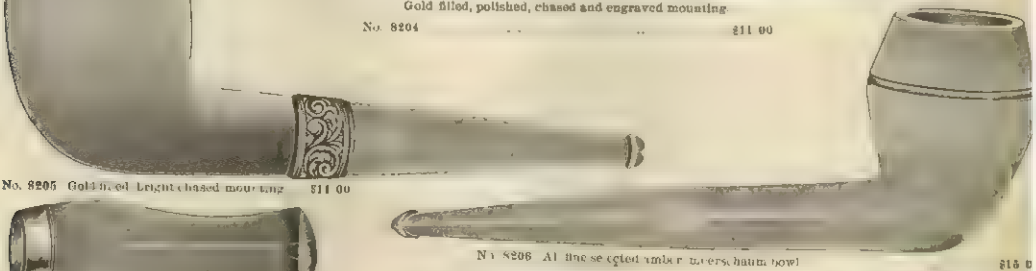
CIGAR HOLDER

No. 8203 ..... $3 00



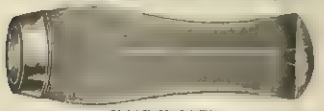
Gold filled, polished, chased and engraved mounting

No. 8204 .. .. $11 00



No. 8205 Gold filled, bright chased mounting $11 00

No. 8206 All fine selected amber Meerschaum bowl $15 0



CIGAR HOLDER.

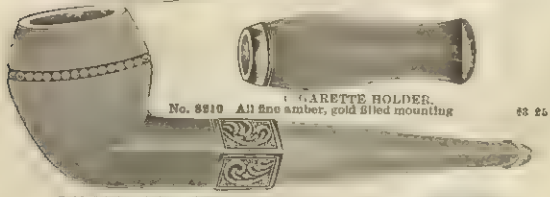
No. 8207 All fine amber, gold filled mounting $4 50

14k gold filled, polished band, applied oxidized sterling silver ornament.

No. 8208 $14 25

14k gold filled, polished, chased mounting.

No. 8209 ..... $3 0

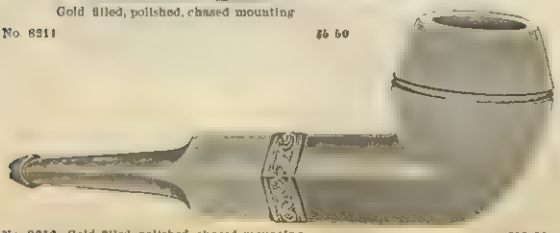


CIGARETTE HOLDER.

No. 8210 All fine amber, gold filled mounting $3 25

Gold filled, polished, chased mounting

No. 8211 $5 50



No. 8212 Gold filled, polished, chased mounting $10 00

No. 8213 Polished, gold filled mounting, detachable stem. .. $12 0

Finest Quality Genuine French Briar Pipes.

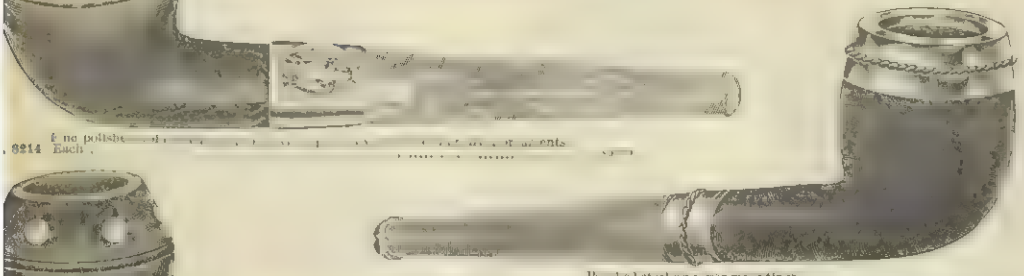
FINE SELECTED AMBER STEMS.

Put up in fine plush lined leather cases.

Cuts are exact size. **Prices each.**

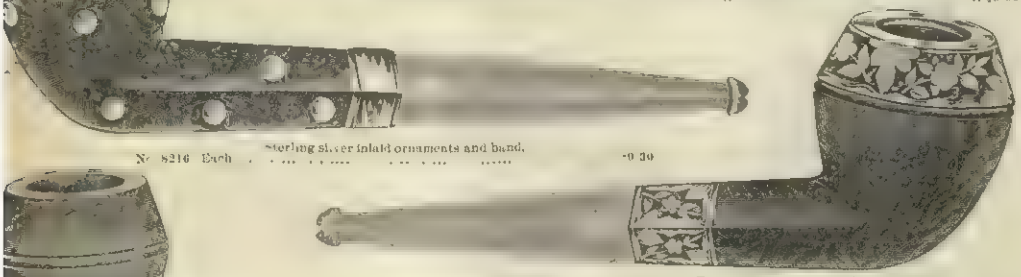
Fine polished [illegible] mountings.

No. 8214 Each [illegible]



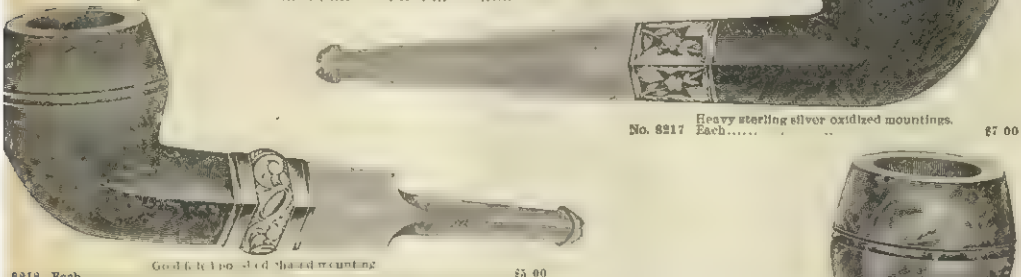
Polished sterling silver mountings.

No. 8215 Each .. $0 00



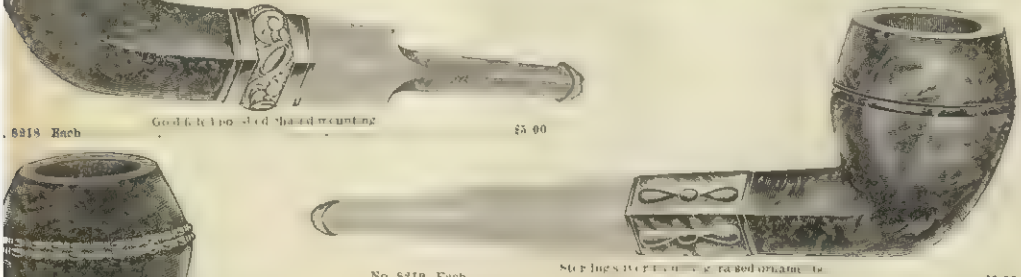
Sterling silver inlaid ornaments and band.

No. 8216 Each [illegible] 0 00



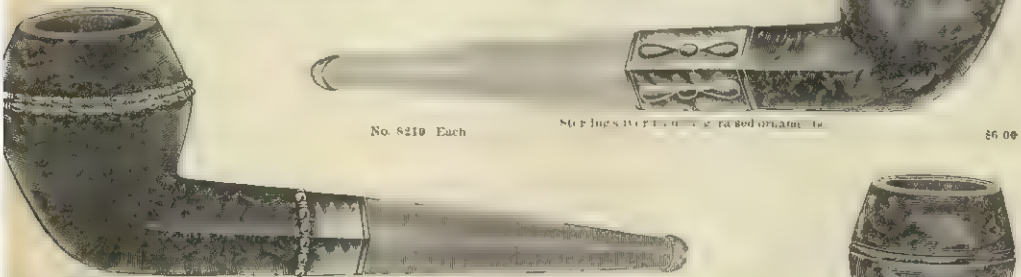
Heavy sterling silver oxidized mountings.

No. 8217 Each..... $7 00



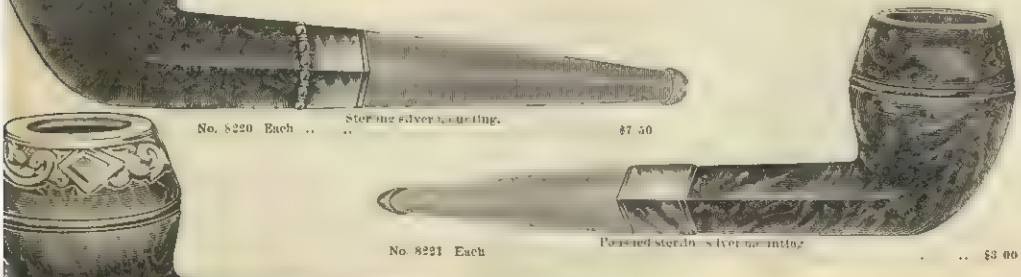
Gold filled polished chased mounting.

No. 8218 Each $5 00



Sterling silver [illegible] raised ornaments.

No. 8219 Each $6 00



Sterling silver [illegible] mounting.

No. 8220 Each $7 50

Pressed sterling silver mounting.

No. 8221 Each .. $3 00

Fine gold filled polished, chased mountings.

8222 Each $6 00

The above prices are subject to the regular discount

FINEST QUALITY GENUINE FRENCH BRIAR PIPES.

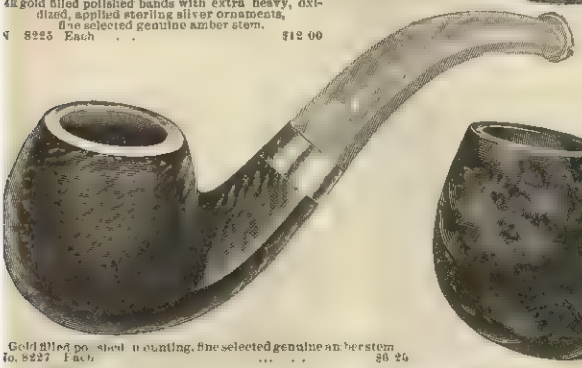
Put up in fine plush lined leather cases. Cuts are exact size. Prices Each.

Sterling silver inlaid trimmings, fine selected genuine amber stem.
No. 8223 Each $12 00

Polished sterling silver mounting, detachable stem, fine selected genuine amber stem.
No. 8221 Each $4 50

14k gold filled polished bands with extra heavy, oxidized, applied sterling silver ornaments, fine selected genuine amber stem.
No. 8225 Each $12 00

Gold filled, polished chased, mountings, fine selected genuine amber stem
No. 8226 Each $8 00



Gold filled polished mounting, fine selected genuine amber stem
No. 8227 Each $6 25

Polished sterling silver mounting, fine imitation amber stem.
No. 8228 Each $3 00

Polished sterling silver mounting, fine selected genuine amber stem.
No. 8229 Each $6 00

Gold filled polished mounting, fine selected genuine amber stem.
No. 8230 Each $4 00

The above prices are subject to the regular discount.

POST HOLE AUGERS.

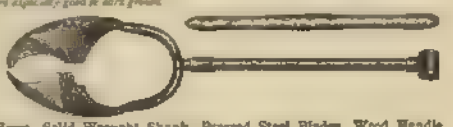
Digwell, Tool Steel Blades, 1 Inch Wrought Iron Tube Shank, Malleable Iron Castings, Wood Handle

No.	54	55	56	57	58	59	
Width,				7	8	9	In.
Wt per doz.	$21.00	21.00	21.00	108	120	128	lbs.
Per doz.				$24.00	$28.00	32.00	

[illegible] Steel can be replaced if worn or broken. Handles [illegible] Shank is wrought iron pipe 1 in. and will [illegible]

No. 48. 8 Digwell, cast base and [illegible] wrought tube wood handle, weight net [illegible] lbs. per dozen $ 2.00

The teeth in one blade do not touch [illegible] in the other, but cut in between. The long teeth in the right hand blade cut [illegible] the worst. The small brush up to earth much more rapidly than [illegible] and are especially good in sandy ground.



Howe, Solid Wrought Shank, Pressed Steel Blades, Wood Handle.

No. 16. 6	weight per [illegible]	per dozen $24.00
No. 18. 8	weight net [illegible] lbs.	24.00

Clarke's [illegible] will dig in wet clay, loam or gravelly soil without water or chopping. [illegible] the ground, [illegible] and withdrawn [illegible] the auger, [illegible] because it [illegible] dirt [illegible] auger [illegible] as dirt packs in it automatically from the [illegible] the auger [illegible] when the auger will do the work desired.

Vaughan's Iron Tube, Malleable Iron Top, Two Steel Blades, without Wood Handle.

No.	24	26	27	28	29	
Width,	4	6	7	8	9	In.
Wt per doz.	50	60	62	64	66	lbs.
Per dozen	$ 2.50	12.50	12.50	12.50	7.50	

HALF DOZEN IN A BUNDLE.

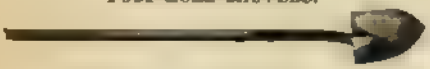
VAUGHAN'S AUGER PARTS.

No. 1 No. 2 No. 3 No. 4

No. 1—Top casting and hollow tube, weigh. per dozen 40 lbs.,	each $	0.70
No. 2—Auger [illegible] weigh per dozen [illegible] lbs.		.70
No. 3—Blades, 4, 6, 7, 8 or 9 in. average weight per dozen 7 lbs.,		.30
No. 4—Auger bottom, 4, 6, 7, 8 [illegible] 9 in. average weight per dozen 20 to 26 lbs.,		.80

TELEGRAPH CONSTRUCTION TOOLS.

POST HOLE SHOVELS.



Riveted Socket, Reinforced Hickory Handle, 9 Inch Steel Blade.

No. 112—7 ft. handle, W. U. pattern, weight per doz. 90 lbs. per dozen $24.00
No. 114—8 ft. handle, W. U. pattern, weight per doz. 96 lbs. 28.00

POST HOLE SPOONS

Riveted Socket, Hickory Handle, 9 Inch Steel Spoon.

No. 116—7 ft. handle, W. U. pattern, weight per doz. 93 lbs. per dozen, $24.00
No. 118—8 ft. handle, W. U. pattern, weight per doz. 96 lbs. per dozen, 28.00

SLICK DIGGERS.

Selected Hickory Handle, Steel Blade.

No. 125—Length 8 ft., wt per doz. 204 lbs., per dozen $48.00

DIGGING BARS.

No. 120—Round, steel, 1¼ in. x 8 ft., wt 25 lbs. per dozen $4[illegible]
No. 122—Octagon steel, 1¼ in. x 8 ft., wt 28 lbs. [illegible]

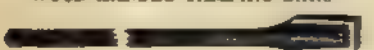
CROW AND DIGGING BARS.

No. 144—Octagon steel, [illegible] ft., wt 8 lbs. per dozen $1[illegible]
No. 145—Octagon steel, [illegible] ft., wt 26 lbs. [illegible]

TAMPING AND DIGGING BARS.

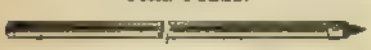
No. 140—[illegible] ft., wt [illegible] lbs. per dozen $[illegible]
No. 141—[illegible] ft., wt [illegible] lbs. [illegible]

WOOD HANDLE TAMPING BARS



No. 124—7 ft. hardwood handle painted red, cast [illegible] wt 16 lbs. per dozen $25.00

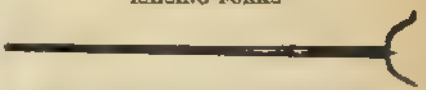
PIKE POLES.



Cypress Handle, Steel Point and Ferrule.

No. 170—12 ft., wt 9½ lbs., per dozen $24.00
No. 170—14 ft., wt 10½ lbs., " 26.00
No. 170—16 ft., wt 11 lbs., " 28.00
No. 170—18 ft., wt 11½ lbs., " 30.00

RAISING FORKS



Cypress Handle, Wrought Steel Fork and Ferrule.

No. 172—12 ft. long, wt per doz. 170 lbs. per dozen $36.00
No. 173—14 ft. long, wt per doz. 156 lbs. [illegible]
No. 174—16 ft. long, wt per doz. 190 lbs. " 54.00

CANT HOOKS.

Rock Maple Handle, Malleable Iron Clamp and Toe Ring, Chisel Shaped Hook.

No. 190—4½ ft., wt 8 lbs., each $2.25

CARRYING HOOKS.

Rock Maple Handle, Malleable Iron Clamp, Crucible Steel Swivel Hook.

No. 194—4 ft. handle, wt 6½ lbs., each $3.00

POLE SUPPORTS.

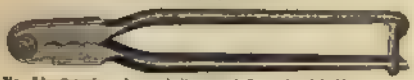
Mule Jenny

Selected Hickory, Heavily Ironed and Braced.

No. 176—4½ ft., mule, wt 34 lbs., each $5.00
No. 176—6 ft., mule, wt 40 lbs., " 6.00
No. 176—7½ ft., mule, wt 47 lbs., " 7.00
No. 178—6 ft., jenny, wt 33 lbs., " 6.00
No. 178—7½ ft., jenny, wt 43 lbs., " 9.00

TELEGRAPH CONSTRUCTION TOOLS.

SPLICING CLAMPS.



No. 53—9 in. forged steel, half polished, 2 round and 2 oblong holes, w't per doz. 11 lbs. - - - per dozen $ 5.00

No. 55—10 in., forged steel, full polished, 4 round holes for 8, 10, 12 and 14 gauge wire, w't per doz. 12 lbs. per dozen. - - - - - - - - - - - - 3 6.00

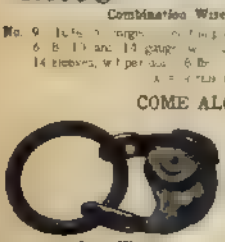
No. 57—11 in., 5 round holes for 8, 9, 10, 12 and 14 gauge wire, otherwise same as No. 55, w't per doz. 15 lbs., per dozen, - - - - - - - - - - 20.00

Combination Wire and Sleeve.

No. 9—Forged steel, polished, 5 round holes, for 6, 8, 10 and 14 gauge wire, 1 for 8, 10, 12 and 14 sleeves, w't per doz. 6 lbs. - - - per dozen 3x4.00

A FULL LINE IN A BOX.

COME ALONGS.



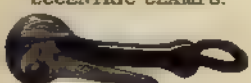
Wrought Iron

No. 127—Large, strong, heavy, square and oval wire, w't per doz. 8 lbs. per dozen - - - $24.00

No. 128—Extra large, strong, heavy, square and oval wire and fiber, w't per doz. 12 lbs. - per dozen 28.00

No. 126—Regular 2 rings, No. 9 wire and fiber, w't per doz. 15 lbs., - - - - - - - per dozen 0.00

ECCENTRIC CLAMPS.



No. 130—Crucible steel, polished head, for No. 9 wire and finer, w't per doz. 9 lbs. - - - per dozen $1.00

No. 130S—Same as above or concentric clamps, straps, - - - 6.00

HOWE WIRE TIGHTENERS.

Forged Steel Vise, Polished Jaws, Polished Heavy Steel Hook, Self Adjusting Grip.

No. 213—Without vise, with strap, w't 2½ lbs. - each $5.50

No. 219—With 5½ in. vise with strap, w't 3½ lbs. 7.50

No. 219½—With 5½ in. vise with strap, double purchase, w't 4 lbs., - - - - - each 9.00

TOOL BELTS

No. 350—Leather, length over all 40 in., width 2 in., w't per doz. 5 lbs. - - - - - - - per dozen $15.00

TOOL AND CARBON BAGS.

Tool. Carbon.

Tool.

No. 316—[illegible] leather, w't [illegible] each

No. 320—[illegible] leather with shoulder strap, w't 3 lbs., each 7.00

Carbon, with Shoulder Straps

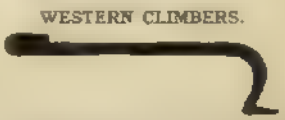
No. 325—Leather, w't 2 lbs., - - - - each $2.50

No. 326—Metal, w't 2 lbs., - - - - - 2.00

PULLEY BLOCKS.

No. 154—4 in., without rope, w't per pair 4½ lbs., - per pair $6.50

WESTERN CLIMBERS.

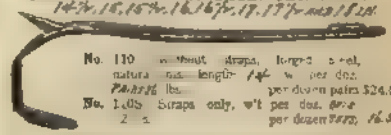


No. 105—Without straps, forged steel, polished, length 16 in., w't per doz. pairs 24 lbs., - per dozen pairs $18.00

No. 106S—Straps only, w't per doz. pairs 12 lbs., per dozen [illegible] - - - - 12.50

DICKE SAFETY EASTERN CLIMBERS.

14½, 15, 15½, 16, 16½, 17, 17½ and 18 in.



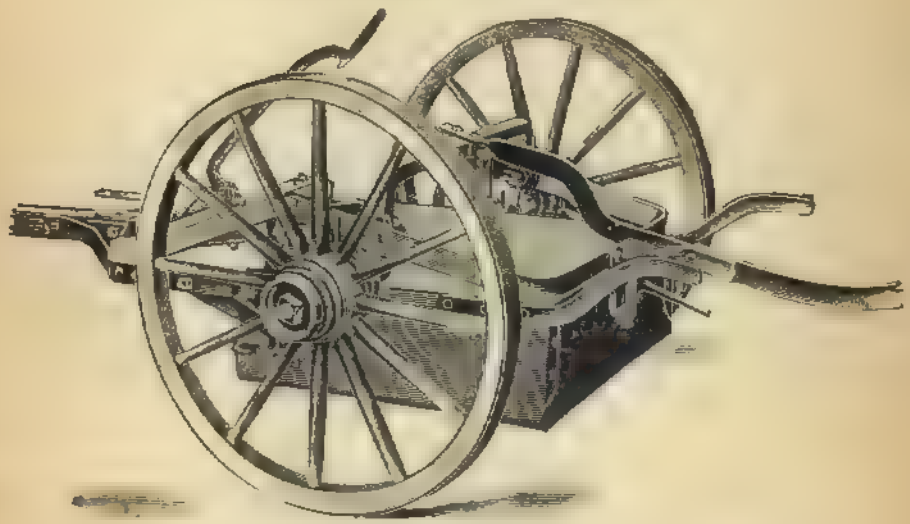
No. 110—Without straps, forged steel, natural [illegible] length 14 in., w't per doz. pairs [illegible] lbs., per dozen pairs $24.00

No. 110S—Straps only, w't per doz. pairs 2 lbs., per dozen pairs, 12.50

COMBINATION PAY-OUT REELS.

No. 136—Cast, ironed and bolted, w't 80 lbs. - each 16.00

THE AMERICAN
WHEELED SCRAPER.



No. 2½.

This Cut represents the Scraper when loaded ready to go to the dump.

DESCRIPTION

Wheels—Best wood hub wheels, made of thoroughly seasoned stock, 44 inches high, with 3x⅜-inch steel tires. These wheels will outlast the other parts of the scraper. Metal wheels furnished when especially ordered. See page 23.

Axle—Of hammered Steel. Arched high to give more room for filling.

Tongue—Best quality of oak, very strong, ironed with a diamond brace to draft bars.

Draft Bars—Special steel. Very strong. Securely braced.

Bow. Is of the best quality of steel, made especially for the purpose. Size 41 inches long, 38 inches wide, 15½ inches deep. It raises high to clear obstructions when going to the dump.

Bail—Conforms to shape of the top of the bowl, thus increasing its capacity, and avoiding the difficulty experienced with the old style bail when pulling down the lever or Johnson bar.

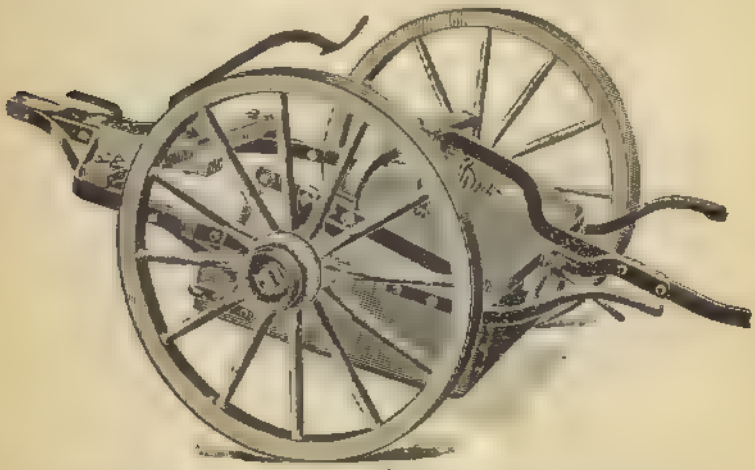
Hooks—The hooks to prevent the scraper from dumping while filling are of ample strength, and carefully adjusted to enable the scraper to fill readily and at the same time prevent the bowl from going too deep.

Sand Excluders on axles are simple, practical and efficient. No trouble to take wheel off to properly oil the spindles.

Capacity—14 cubic feet.

Weight—650 pounds.

THE AMERICAN
WHEELED SCRAPER.



No 2.

This Cut represents the Scraper when loaded ready to go to the dump.

DESCRIPTION.

Wheels—Best wood hub wheels, made of thoroughly seasoned stock 40 inches high, with extra heavy tires, 3x3½ inches. These wheels will outlast the other parts of the scraper. We furnish scrapers with steel wheels when so ordered. See page 18

Axle—Of hammered steel. Arched high to give more room for the dirt in filling.

Tongue—Best quality of oak, very strongly ironed, with additional brace to draft bars.

Cross Bars. Heavy wooden cross bar, which not only serves as a brace to the Draft bars, but prevents draft bars from bending down at the corners.

Draft Bars—Special steel. Very strong. Securely braced.

Bowl—Is of the best quality of steel made especially for the purpose. Sizes 37 inches by 38 inches by 13 inches deep. It raises high to clear obstructions when going to the dump.

Bail—Conforms to shape of the top of the bowl thus increasing its capacity, and avoiding the difficulty experienced with the old style bail when pulling down the lever.

Hooks—The hooks to prevent the scraper from dumping while filling are of ample strength and carefully adjusted to enable the scraper to fill readily, and at the same time prevent the bowl from going too deep.

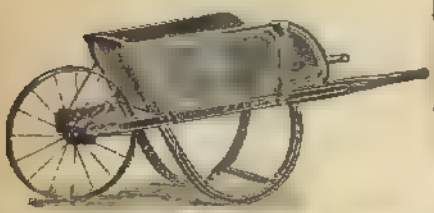
Sand Excluders on the axles are simple, practical and efficient. No trouble to take the wheel off to properly oil the spindles.

Weight—600 pounds.

WHEELBARROWS.

PAN AMERICAN RAILROAD.

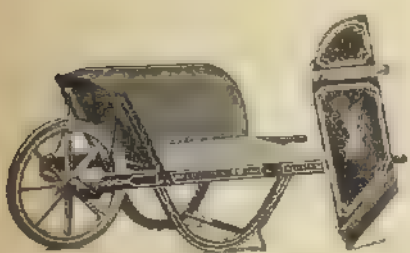
No. 133½—14 gauge steel [illegible] per dozen 70[illegible] lbs. per dozen $75.00



Clipper Garden, Painted Striped and Bolted, Jointless Bent Legs.

No. 010—20 in. wood wheel [illegible] per dozen 50 lbs. $3.50
No. 010—[illegible] steel wheel [illegible] per dozen 50 lbs. 4.00
Extra Steel Wheels, for No. 010 [illegible] per dozen 44 lbs. per dozen .75

No. 12—Steel [illegible] handles, [illegible] bottom [illegible] Drawn [illegible] steel wheel [illegible] per dozen $40.00
No. 12—Steel [illegible] [illegible] per dozen [illegible]



Extra Heavy Garden, Painted, Striped and Bolted, Jointless Bent Legs, with Steel Shoe.

No. 7—30 in. wood wheel per dozen $50.00
No. 8—[illegible] steel wheel .00

[illegible] the scoop frame and [illegible] a wide strap at proportion to [illegible] Apron width [illegible] Axle [illegible] Shaft [illegible] Axle [illegible] PER DOZEN.

ROAD SCRAPERS.

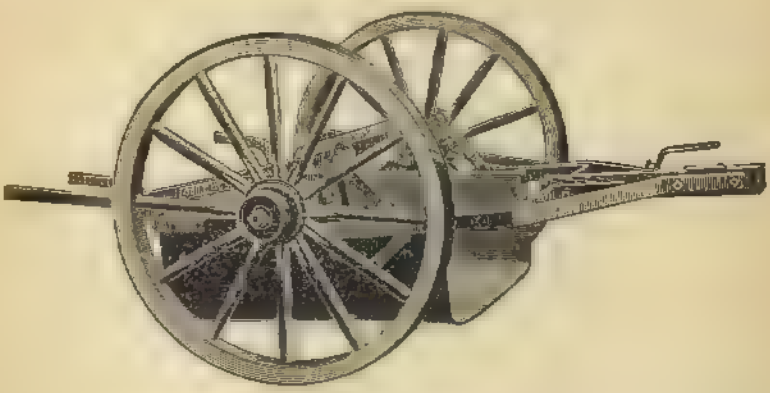
Wheel Runners.

No. 1—Capacity 7 cubic ft. [illegible] lbs. each $2.50
No. 2—Capacity 5 cubic ft. [illegible] lbs. " 1.00
No. 3—Capacity 3 cubic ft. [illegible] lbs. " 0.75

With Runners.

No. 11—Capacity 7 cubic ft. [illegible] 95 lbs. each $0.50
No. 22—Capacity 5 cubic ft. [illegible] 80 lbs. " .50
No. 33—Capacity 3 cubic ft. [illegible] 73 lbs. " 1.25

Made from [illegible] pressed hardened steel and stamped from one sheet without joint where [illegible]



No. 1.

Wheels—Of the best stock thoroughly seasoned, 35 inches high, tires 2¼ by ¼ in.

Axle—1⅜ inches square.

Draft Bars—Extra strong and well braced.

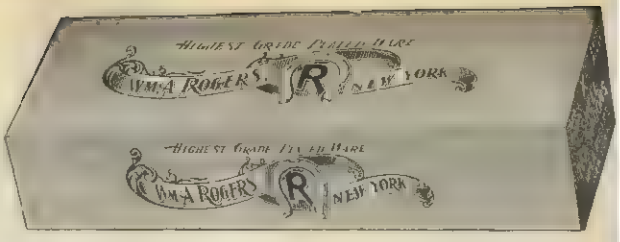
Bowl—65 inches long, 34½ inches wide, 11½ inches deep.

Capacity—9 cubic feet.

Weight—400 pounds.

Hooks—Strong steel hooks are used to prevent the Scraper from dumping filling.

Wm. A. Rogers.



Celebrated SILVER PLATED FLATWARE. Wm. A. Rogers are one of the oldest established makers. The quality of their product is beyond question.

PRICES PER DOZEN.

The goods illustrated on this page are the genuine Wm. A Rogers brand; extra heavily plated on 21 per cent. nickel silver, hand burnished and quality guaranteed. The genuine Wm. A Rogers goods are put up in boxes like cut and are accompanied by a written guarantee from the manufacturer.

CARLTON PATTERN

Made in A1 only.

No.	Tea Spoons.	Doz.
2870	A1 plate	$ 2 70

Dessert Spoons.

2871	A1 plate	$ 4 70

Table Spoons.

2872	A1 plate	$ 5 40

Medium Forks.

2873	A1 plate	$ 5 40

Dessert Forks.

2874	A1 plate	$ 4 70

Butter Knives.

2875	A1 plate	$ 5 35

Sugar Shells.

2876	A1 plate	$ 4 70
2877	A1 Gilt "	9 35

ARDSLEY PATTERN.

Made in A1 only.

No.	Tea Spoons.	Doz.
2878	A1 plate	$ 2 70

Dessert Spoons.

2879	A1 plate	$ 4 70

Table Spoons.

2880	A1 plate	$ 5 40

Medium Forks.

2881	A1 plate	$ 5 40

Dessert Forks.

2882	A1 plate	$ 4 70

Butter Knives.

2883	A1 plate	$ 5 35

Sugar Shells.

2884	A1 plate	$4 70
2885	A1 Gilt "	9 35

ELMORE PATTERN FRENCH GRAY

Made in A1 only.

No.	Tea Spoons.	Doz.
2886	A1 plate	$ 2 70

Dessert Spoons.

2887	A1 plate	$ 4 70

Table Spoons.

2888	A1 plate	$ 5 40

Medium Forks

2889	A1 plate	$ 5 40

Dessert Forks.

2890	A1 plate	$ 4 70

Butter Knives.

2891	A1 plate	$ 5 35

Sugar Shells.

2892	A1 plate	$ 4 70
2893	A1 Gilt "	9 35

LINDEN PATTERN.

Made in A1 only.

No.	Tea Spoons.	Doz.
2894	A1 plate	$ 2 70

Dessert Spoons.

2895	A1 plate	$ 4 70

Table Spoons.

2896	A1 plate	$ 5 40

Medium Forks.

2897	A1 plate	$ 5 40

Dessert Forks.

2898	A1 plate	$ 4 70

Butter Knives

2899	A1 plate	$ 5 35

Sugar Shells.

2900	A1 plate	$ 4 70
2901	A1 Gilt "	9 35

SHELL PATTERN.

A1 and Triple only.

No.	Tea Spoons.	Doz.
2902	A1 plate	$ 2 70
2903	Triple "	4 40

Dessert Spoons.

2904	A1 plate	$ 4 70
2905	Triple "	7 90

Table Spoons.

2906	A1 plate	$ 5 40
2907	Triple "	8 80

Dessert Forks.

2908	A1 plate	$ 4 70
2909	Triple "	7 90

Medium Forks.

2910	A1 plate	$ 5 40
2911	Triple "	8 80

Twist Butters.

2912	A1 plate	$ 5 35
2913	Triple "	8 80

Sugar Shells.

2914	A1 plate.	$ 4 70
2915	Triple "	7 90

Tipped or Windsor Pattern furnished at same price.

TIPPED PATTERN

No.	Tea Spoons.	Doz.
2916	A1 plate	$ 4 55
2917	XII "	5 35
2918	Triple "	6 40

Dessert Spoons.

2919	A1 plate	$ 8 00
2920	XII "	9 10
2921	Triple "	10 70

Table Spoons.

2922	A1 plate	$ 9 10
2923	XII "	10 70
2924	Triple "	12 80

Dessert Forks.

2925	A1 plate	$ 8 00
2926	XII "	9 10
2927	Triple "	10 70

Medium Forks.

2928	A1 plate	$ 9 10
2929	XII "	10 70
2930	Triple "	12 80

Twist Butters.

2931	A1 plate	$10 70
2932	Triple "	14 95

Sugar Shells.

2933	A1 plate	$ 8 55
2934	Triple "	10 70

The above prices are subject to the regular discount.

Wm. A. Rogers.

Celebrated SILVER PLATED FLATWARE. Wm. A. Rogers is one of the oldest established makers. The quality of their product is beyond question.

PRICES PER DOZEN.

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HANOVER PATTERN.

No.	Tea Spoons.	Doz.
2935	A1 plate	$ 5 10
2936	XII "	5 90
2937	Triple "	6 95
	Dessert Spoons.	
2938	A1 plate	$ 9 10
2939	XII "	10 15
2940	Triple "	11 75
	Table Spoons.	
2941	A1 plate	$10 15
2942	XII "	11 75
2943	Triple "	13 90
	Dessert Forks.	
2944	A1 plate	$ 9 10
2945	XII "	10 15
2946	Triple "	11 75
	Medium Forks.	
2947	A1 plate	$10 15
2948	XII "	11 75
2949	Triple "	13 90
	Twist Butters.	
2950	A1 plate	$11 20
2951	Triple "	15 50
	Sugar Shells.	
2952	A1 plate	$ 9 60
2953	Triple "	11 75

WARWICK PATTERN.

No.	Tea Spoons.	Doz.
2954	A1 plate	$ 5 10
2955	XII "	5 90
2956	Triple "	6 95
	Dessert Spoons.	
2957	A1 plate	$ 9 10
2958	XII "	10 15
2959	Triple "	11 75
	Table Spoons.	
2960	A1 plate	$10 15
2961	XII "	11 75
2962	Triple "	13 90
	Dessert Forks.	
2963	A1 plate	$ 9 10
2964	XII "	10 15
2965	Triple "	11 75
	Medium Forks.	
2966	A1 plate	$10 15
2967	XII "	11 75
2968	Triple "	13 90
	Twist Butters.	
2969	A1 plate	$11 20
2970	Triple "	15 50
	Sugar Shells.	
2971	A1 plate	$ 9 60
2972	Triple "	11 75

MARCELLA PATTERN.

No.	Tea Spoons.	Doz.
2973	A1 plate	$ 5 10
2974	XII "	5 90
2975	Triple "	6 95
	Dessert Spoons.	
2976	A1 plate	$ 9 10
2977	XII "	10 15
2978	Triple "	11 75
	Table Spoons.	
2979	A1 plate	$10 15
2980	XII "	11 75
2981	Triple "	13 90
	Dessert Forks.	
2982	A1 plate	$ 9 10
2983	XII "	10 15
2984	Triple "	11 75
	Medium Forks.	
2985	A1 plate	$10 15
2986	XII "	11 75
2987	Triple "	13 90
	Twist Butters.	
2988	A1 plate	$11 20
2989	Triple "	15 50
	Sugar Shells.	
2990	A1 plate	$ 9 60
2991	Triple "	11 75

EUDORA PATTERN.

No.	Tea Spoons.	Doz.
2992	A1 plate	$ 5 10
2993	XII "	5 90
2994	Triple "	6 95
	Dessert Spoons.	
2995	A1 plate	$ 9 10
2996	XII "	10 15
2997	Triple "	11 75
	Table Spoons.	
2998	A1 plate	$10 15
2999	XII "	11 75
3000	Triple "	13 90
	Dessert Forks.	
3001	A1 plate	$ 9 10
3002	XII "	10 15
3003	Triple "	11 75
	Medium Forks.	
3004	A1 plate	$10 15
3005	XII "	11 75
3006	Triple "	13 90
	Twist Butters.	
3007	A1 plate	$11 20
3008	Triple "	15 50
	Sugar Shells.	
3009	A1 plate	$ 9 60
3010	Triple "	11 75

ARIADEL PATTERN.

No.	Tea Spoons.	Doz.
3011	A1 plate	$ 5 10
3012	XII "	5 90
3013	Triple "	6 95
	Dessert Spoons.	
3014	A1 plate	$ 9 10
3015	XII "	10 15
3016	Triple "	11 75
	Table Spoons.	
3017	A1 plate	$10 15
3018	XII "	11 75
3019	Triple "	13 90
	Dessert Forks.	
3020	A1 plate	$ 9 10
3021	XII "	10 15
3022	Triple "	11 75
	Medium Forks.	
3023	A1 plate	$10 15
3024	XII "	11 75
3025	Triple "	13 90
	Twist Butters.	
3026	A1 plate	$11 20
3027	Triple "	15 50
	Sugar Shells.	
3028	A1 plate	$ 9 60
3029	Triple "	11 75

GRENOBLE PATTERN.

French gray.

No.	Tea Spoons.	Doz.
3030	A1 plate	$ 5 10
3031	XII "	5 90
3032	Triple "	6 95
	Dessert Spoons	
3033	A1 plate	$ 9 10
3034	XII "	10 15
3035	Triple "	11 75
	Table Spoons.	
3036	A1 plate	$10 15
3037	XII "	11 75
3038	Triple "	13 90
	Dessert Forks.	
3039	A1 plate	$ 9 10
3040	XII "	10 15
3041	Triple "	11 75
	Medium Forks.	
3042	A1 plate	$10 15
3043	XII "	11 75
3044	Triple "	13 90
	Twist Butters.	
3045	A1 plate	$11 20
3046	Triple "	15 50
	Sugar Shells.	
3047	A1 plate	$ 9 60
3048	Triple "	11 75

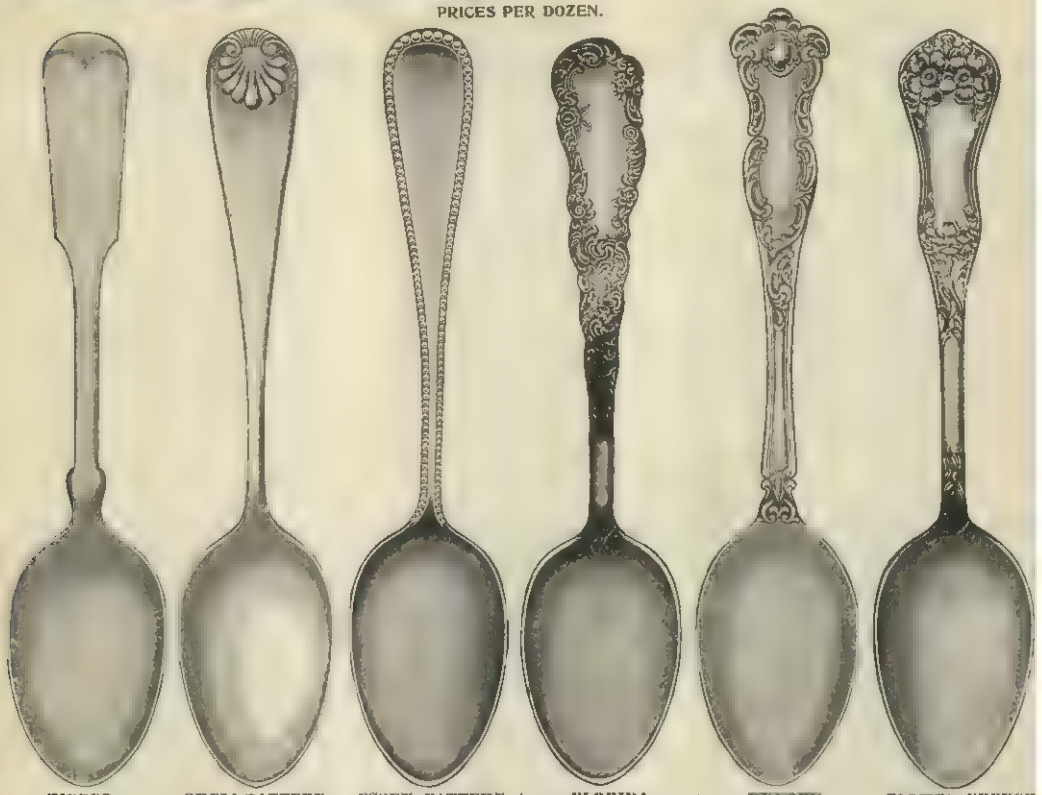
The above prices are subject to the regular discount.

WM. ROGERS MFG. CO.
ANCHOR BRAND

Fine Silver Plated Flatware.

We carry a complete line of the genuine Wm. Rogers & Son goods. These goods are plated with full standard plate on high grade nickel silver base.

PRICES PER DOZEN.



TIPPED PATTERN.
Made in A1 plate only.

Tea Spoons.
No. Per doz.
3049 A1 plate..$2 70
Dessert Spoons.
3050 A1 plate..$4 70
Table Spoons.
3051 A1 plate..$5 35
Medium Forks.
3052 A1 plate..$5 35
Dessert Forks.
3053 A1 plate..$4 70
Butter Knives.
3054 A1 plate..$5 70
Sugar Shells.
3055 A1 plate..$4 55

FANCY PIECES NOT MADE IN TIPPED PATTERN.

SHELL PATTERN.
Made in A1 plate only.

Tea Spoons.
No. Per doz.
3056 A1 plate..$2 70
Dessert Spoons.
3057 A1 plate..$4 70
Table Spoons.
3058 A1 plate..$5 35
Dessert Forks.
3059 A1 plate..$4 70
Medium Forks.
3060 A1 plate..$5 35
Butter Knives.
3061 A1 plate..$5 70
Sugar Shells.
3062 A1 plate..$4 55

FANCY PIECES NOT MADE IN SHELL PATTERN.

ESSEX PATTERN.
Made in A1 plate only.

Tea Spoons.
No. Per doz.
3063 A1 plate..$2 70
Dessert Spoons.
3064 A1 plate..$4 70
Table Spoons.
3065 A1 plate..$5 35
Dessert Forks.
3066 A1 plate..$4 70
Medium Forks.
3067 A1 plate..$5 35
Butter Knives.
3068 A1 plate..$5 70
Sugar Shells.
3069 A1 plate..$4 55

FANCY PIECES NOT MADE IN ESSEX PATTERN.

FLORIDA PATTERN.
Made in A1 plate only.

Tea Spoons.
No. Per doz.
3070 A1 plate..$2 70
Dessert Spoons.
3071 A1 plate..$4 70
Table Spoons.
3072 A1 plate..$5 35
Dessert Forks.
3073 A1 plate..$4 70
Medium Forks.
3074 A1 plate..$5 35
Butter Knives.
3075 A1 plate..$5 70
Sugar Shells.
3076 A1 plate..$4 55
Coffee Spoons.
3077 A1 plate..$4 55
3078 " gilt.. 7 45
Oyster Forks.
3079 A1 plate..$6 05
Ladles.
3080 A1 Cream$13 00
3081 " " gilt 18 75
3082 " Gravy 17 30
3083 " " gilt 25 95
3084 " Oyster 37 45
3085 " " gilt 47 05
3086 " Med 46 10
3087 " " gilt 57 60
Berry Spoons.
3088 A1 plate $23 05
3089 " gilt .. 31 70
Cold Meat Forks.
3090 A1 plate $14 40
3091 " gilt .. 20 20

OXFORD PATTERN.
Made in A1 plate only.

Tea Spoons.
No. Per doz.
3092 A1 plate..$3 35
Dessert Spoons.
3093 A1 plate. $5 35
Table Spoons.
3094 A1 plate $6 70
Dessert Forks.
3095 A1 plate $5 35
Medium Forks.
3096 A1 plate $6 70
Butter Knives.
3097 A1 plate..$6 30
Sugar Shells.
3098 A1 plate..$5 00
Coffee Spoons.
3099 A1 plate..$4 55
3100 " gilt.... 7 45
Oyster Forks.
3101 A1 plate. $6 05
Ladles.
3102 A1 Cream$13 00
3103 " " gilt 18 75
3104 " Gravy 17 30
3105 " " gilt 25 95
3106 " Oyster 37 45
3107 " " gilt 47 05
3108 " Med 46 10
3109 " " gilt 57 60
Berry Spoons.
3110 A1 plate $23 05
3111 " gilt .. 31 70
Cold Meat Forks.
3112 A1 plate $14 40
3113 " gilt .. 20 20
Jelly Servers.
3114 A1 plate $17 30

FLOWER FRENCH GRAY PATTERN.
Made in A1 plate only.

Tea Spoons.
No. Per doz.
3114A A1 plate $3 35
Dessert Spoons.
3114B A1 plate $5 35
Table Spoons.
3114C A1 plate $6 70
Dessert Forks.
3114D A1 plate $5 35
Medium Forks.
3114E A1 plate $6 70
Butter Knives.
3114F A1 plate $6 30
Sugar Shells.
3114G A1 plate $5 00
Coffee Spoons.
3114H A1 plate $4 55
3114I " gilt.. 7 45
Oyster Forks.
3114J A1 plate $6 05
Ladles.
3114K A1Cream$13 00
3114L " " gilt 18 75
3114M " Gravy 17 30
3114N " " gilt 25 95
3114O " Oyster 37 45
3114P " " gilt 47 05
3114Q " Med...46 10
3114R " " gilt 57 60
Berry Spoons.
3114S A1 plate $23 05
3114T " gilt.. 31 70
Cold Meat Forks.
3114U A1 plate$14 40
3114V " gilt.. 20 20
Jelly Servers.
3114W A1 plate$17 30

The above prices are subject to the regular discount.

High Grade Silver Plated Ware

Made in A1 Sectional and Triple Plate.

Each piece bearing the name and trade mark W. H. Rogers, is plated on a solid silver nickel base, and warranted to strip 20 per cent. more silver from the wearing parts of every spoon, knife or fork, than those manufactured by others of similar makes.

TRADE MARK

R WM. H. ROGERS R
NEW YORK & CHICAGO.

NOT CONNECTED WITH ANY OTHER ROGERS

PRICES PER DOZEN.

DOROTHEA PATTERN.

No.	Tea Spoons.	Doz.
2734	A1 plate	$ 5 10
2735	XII "	5 90
2736	Triple "	6 95
	Dessert Spoons	
2737	A1 plate	$ 9 10
2738	XII "	10 15
2739	Triple "	11 75
	Table Spoons.	
2740	A1 plate	$10 15
2741	XII "	11 75
2742	Triple "	13 90
	Dessert Forks.	
2743	A1 plate	$ 9 10
2744	XII "	10 15
2745	Triple "	11 75
	Medium Forks.	
2746	A1 plate	$10 15
2747	XII "	11 75
2748	Triple "	13 90
	Twist Butters.	
2749	A1 plate	$11 20
2750	Triple "	15 50
	Sugar Shells.	
2751	A1 plate	$ 9 60
2752	Triple "	11 75

LEWIS PATTERN.

No.	Tea Spoons.	Doz.
2753	A1 plate	$ 5 10
2754	XII "	5 90
2755	Triple "	6 95
	Dessert Spoons	
2756	A1 plate	$ 9 10
2757	XII "	10 15
2758	Triple "	11 75
	Table Spoons.	
2759	A1 plate	$10 15
2760	XII "	11 75
2761	Triple "	13 90
	Dessert Forks.	
2762	A1 plate	$ 9 10
2763	XII "	10 15
2764	Triple "	11 75
	Medium Forks.	
2765	A1 plate	$10 15
2766	XII "	11 75
2767	Triple "	13 90
	Twist Butters.	
2768	A1 plate	$11 20
2769	Triple "	15 50
	Sugar Shells.	
2770	A1 plate	$ 9 60
2771	Triple "	11 75

DAISY PATTERN.

Made in A1 plate only.

No.	Tea Spoons.	Doz.
2772	A1 plate	.$2 70
	Dessert Spoons.	
2773	A1 plate	.$4 70
	Table Spoons	
2774	A1 plate	$5 35
	Medium Forks.	
2775	A1 plate	.$5 35
	Dessert Forks.	
2776	A1 plate	.$4 70
	Butter Knives.	
2777	A1 plate	.$5 35
	Sugar Shells.	
2778	A1 plate	.$4 70

ELIZABETH PATTERN.

Made in A1 plate only.

No.	Tea Spoons.	Doz.
2779	A1 plate	.$2 70
	Dessert Spoons.	
2780	A1 plate	.$4 70
	Table Spoons.	
2781	A1 plate	.$5 35
	Medium Forks.	
2782	A1 plate	$5 35
	Dessert Forks.	
2783	A1 plate	.$4 70
	Butter Knives.	
2784	A1 plate	.$5 35
	Sugar Shells.	
2785	A1 plate	.$4 70

MERTILLA PATTERN.

Made in A1 plate only.

No.	Tea Spoons.	Doz.
2786	A1 plate	.$2 70
	Dessert Spoons.	
2787	A1 plate	.$4 70
	Table Spoons.	
2788	A1 plate	.$5 35
	Medium Forks	
2789	A1 plate	.$5 35
	Dessert Forks	
2790	A1 plate	.$4 70
	Butter Knives.	
2791	A1 plate	.$5 35
	Sugar Shells.	
2792	A1 plate	.$4 70

TIPPED PATTERN.

Made in A1 and Triple plate only.

No.	Tea Spoons.	Doz.
2793	A1 plate	.$2 70
2794	Triple "	4 40
	Dessert Spoons.	
2795	A1 plate	.$4 70
2796	Triple "	7 90
	Table Spoons.	
2797	A1 plate	$5 35
2798	Triple "	8 80
	Dessert Forks.	
2799	A1 plate	.$4 70
2800	Triple "	7 90
	Medium Forks.	
2801	A1 plate	.$5 35
2802	Triple "	8 80
	Twist Butters.	
2803	A1 plate	.$5 35
2804	Triple "	8 80
	Sugar Shells.	
2805	A1 plate	.$4 70
2806	Triple "	7 90

The above prices are subject to the regular discount.

CARPET BEATERS.

No. 1

No. 4.

No. 1—Rawson[illegible] piece [illegible] perforated [illegible] 24 in. long, wood handle, weight [illegible] 4 and 4½ lbs. per dozen $ 5[illegible]

No. 4—Three strands No. 12 galvanized wire, bevelled, hardwood handle [illegible] in. heavy [illegible] 30 in. long. Weight per dozen 6 lbs., per dozen, [illegible] 2.50

ONE DOZEN IN A BUNDLE

No. 2

No. 40

No. 2—Rattan, with handle, 41 in. long, weight per dozen 5 lbs., [illegible] per dozen $3 00

No. 40—Rattan two strands 9x7 in. bla[illegible] twisted rattan handle [illegible] wrapped in two places, extreme length 27 in. weight per dozen 3 lbs., [illegible] per dozen 2.50

FLOOR SCRAPERS.

3-16 Inch Rubber, Nailed.

No. 112—12 in., weight per dozen 6 lbs., [illegible] per dozen $3.50
No. 116—16 in., weight per dozen 7 lbs. [illegible] 4.00

3-4 Inch Pure Rubber Screwed

No. 140—14 in., weight per dozen 15 lbs., [illegible] per dozen $5 00
No. 160—16 in., weight per dozen [illegible] lbs. 5 50

WINDOW CLEANERS.

PEERLESS.

Wood Frame Inserted Rubber

Nos.	210	212	214	216
Length	10	12	14	[illegible] in
Weight per [illegible]	[illegible] lbs.	[illegible] lbs.	[illegible]	[illegible] lbs.
Per dozen	[illegible]	[illegible]	[illegible]	[illegible]

ONE DOZEN IN A BOX

XLCR.

Galvanized Steel Frame, Japanned Handle, Pure Rubber.

Nos.	310	312	314	316
Length	10	12	14	[illegible] in
Weight per [illegible]	[illegible]	[illegible]	[illegible]	[illegible] lbs.
Per dozen	5[illegible]	[illegible]	6 00	7 50

ONE DOZEN IN A BOX

Packard "Thirty" for 1908

The 1908 Packard car shows a continuance of the well-known Packard policy of one model a year and that model a development of, rather than a departure from, the preceding model. In producing its new Packard "Thirty," the Packard Motor Car Company, of Detroit, Michigan, has retained those features of design and construction which have become recognized as thoroly "Packard," and has changed detail as experience has taught and as dictated by a keen study of refinement.

The new "Thirty" has a slightly longer wheel base and 36-inch wheels. The body rests low on the frame, plenty of allowance for spring action being obtained by recessed panels in the sides of the tonneau, which also allow an extremely wide and comfortable rear seat. This 1908 Packard, while most notably a touring car for general service, is supplied as a limousine, landaulet and runabout, or is equipt with cape cart or Victoria top.

1908 Packard "Thirty." Note the arched indentation in the side panels of the rear seats thus providing larger room for the wheels while allowing the use of a wider and more comfortable seat. The wheel base is 123½ inches, and 36-inch wheels are used. Price, with standard finish and equipment, $4200 f. o. b. factory.

THE MOTOR.

The 4-cylinder, vertical, water-cooled motor is of 5-inch bore by 5½-inch stroke. The European rating is 30 horse-power at 650 revolutions per minute. The actual brake horse-power by the American system exceeds this figure. The cylinders are cast in pairs, with water jackets and valve chambers integral. The castings for cylinders, exhaust manifolds, pistons, and piston ring blanks are made in France, from a gray iron especially adapted to the construction of such parts. The pistons are ground and are fitted with four ground rings. the cylinders, pistons and rings being "lapt" together with a suitable polishing agent which gives them a highly-finished surface and a smoothly-working fit.

The crank shaft is cut from a solid billet of hammer-forged, high-carbon, open-hearth steel. It is oil-tempered; all bearing surfaces are ground and the entire shaft is machine finished. It runs on three liberal bearings bushed with Parsons white bronze. The connecting rods are drop forgings. The crank pin bearings are bushed with Parsons white bronze, and the piston pins with hard bearing bronze.

The inlet and exhaust valves are on opposite sides of the cylinders; they are all mechanically operated and interchangeable. The cam shafts are enclosed within the crank case and are hence fully protected from dirt and certain of ample lubrication. The cam shaft drive gears, as well as those of the magneto and water pump, are contained in a separate, but integrally cast, oil-tight extension of the crank case.

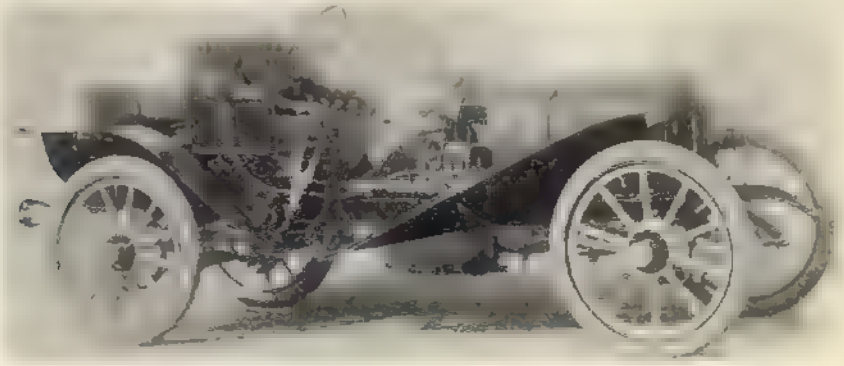
CRANK CASE.

The crank case is cast of a special aluminum alloy in three horizontal sections. The uppermost section forms the engine base and is supported directly on the side members of the main frame of the car. On each side, between the transverse supporting arms, is a horizontal, integrally-cast web which entirely encloses the space between the motor and frame, affording complete protection to the motor, magneto, and other parts above it. The crank-shaft bearings are held between the uppermost and middle sections, while the bottom section is simply an oil well, easily removable for inspection or adjustment of the connecting rods, cam shafts, etc., without disturbing the crank-shaft bearings. The crank case is divided into front and rear compartments by a transverse central partition which supports the middle crank-shaft bearings. The crank case drain cocks are provided with new anti-clogging devices.

CARBURETOR.

The carburetor is of special Packard design and construction. It is of the float-

feed, aspirating nozzle type, with automatic auxiliary air inlet. The mixing chamber is cylindrical and vertical, containing in its lower portion the aspirating nozzle and above this a butterfly throttle. The carburetor is secured to the intake pipe by four bolts. The auxiliary air inlet is a poppet valve under control of a coil spring. It automatically governs the intake of air to keep the mixture of the correct proportion at all engine speeds. Its tension, to suit different atmospheric conditions, may be regulated by a sliding wedge, which is actuated by a small lever on the dashboard of the car. The carburetor is kept at a uniform temperature by warm water circulating thru a jacket surrounding the mixing chamber. This circulation is incorporated in the general water-cooling system of the motor. The fuel supply is taken by gravity from a copper gasoline tank under the front seat and containing twenty-one gallons

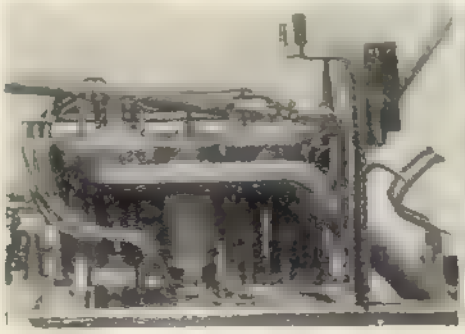


1908 Packard "Thirty" Runabout. The motor and driver's seat are placed [illegible] and the wheel base is 108 inches, while the seats are lower. The gasoline tank has 21 [illegible]

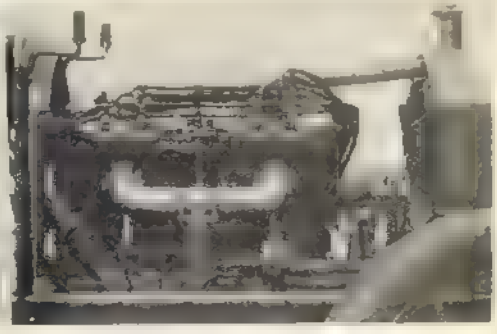
regulated. The fan runs on imported annular ball bearings. The water-circulation system has a capacity of six gallons. The water, oil and gasoline tank caps are secured by bayonet locks instead of screw threads

IGNITION

Ignition is by jump spark, the current being obtained from an imported Eisemann low-tension magneto. This is mounted on the motor bed on the left side and is direct gear-driven by enclosed gears. A Fulmen imported storage battery, used primarily for starting the motor from the seat is always in reserve. There is a transformer coil for the magneto current, and a vibrator coil for the battery current. The two coils, with a single hand-switch for both magneto and battery between them, are arranged as a unit in a box on the dash. The switch is provided with a lock. The commutator for the battery primary current is on a vertical shaft at the rear of the motor and is driven from the cam shaft by enclosed bevel gears. There is [illegible] set of secondary or high tension, wires, the same spark plugs being used for both magneto and battery systems. The plugs are connected with the secondary wires by knife switches. These permit the instant disconnection of any plug for inspection and testing of ignition or for other purposes



Left Side of 1908 Packard Motor, showing the oil [illegible], oil tank, magneto, timer and wiring

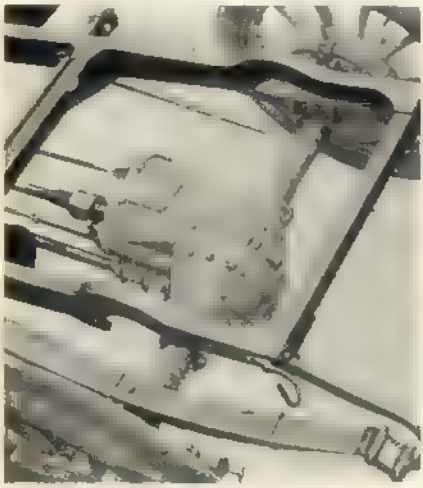


Right Side of 1908 Packard Motor showing fan mounting and adjustment, water governor, carburetor and individual knife switches at the spark plugs

WATER CIRCULATION

The water circulation for cooling the motor is positive by means of a gear-driven gear pump. The radiator is of the ribbed style, combined with the tank. Forced draft to increase the cooling efficiency is obtained by a belt-driven fan. It is adjustably mounted on a bracket on the front of the motor base, so that the tension of the belt may be

The lubrication of the motor is by splash from the crank case to the cylinders and engine bearings. Oil is pumped separately to the front and rear compartments of the crank case. The transverse central partition maintains an independent level of oil below each pair of cylinders, regardless of the inclination of the car on grades. The double plunger pump is accessibly located at the left of the motor and is driven by a worm on the exhaust valve cam shaft. It takes oil from a vertical copper reservoir close to and between the pairs of cylinders, this location insuring that the oil will be warmed



Packard "Bridge" Rear Axle, differential and speed change gear. The case is the 1908, is provided with internal instead of external ribs

and thus kept in a fluid condition, even in coldest weather. The oil, on its way to the crank case, passes thru two drip sight-feeds on the dashboard. The compression relief cocks are of improved design to facilitate their operation

ENGINE CONTROL.

The engine speed is under the control of a hydraulic governor. This is a diaphragm apparatus incorporated in the water-circulation system. It acts directly on the butterfly throttle above the carburetor, and tends to prevent the motor from racing when the car is standing with the motor running idly Its limitations are adjustable and, by a pedal, it may be cut out of action for instantaneous acceleration. The throttle is also under the control of the hand lever on the steering wheel, while another manual lever on the wheel advances or retards the spark.

The Packard type internal expanding clutch is retained, with improved construction to insure gradual engagement. The expanding ring within the fly wheel rim is actuated by a screw-and-nut device and is provided with means of easy adjustment

PROPELLER SHAFT CHANGE SPEED GEAR AND REAR AXLE.

The propeller shaft connecting the clutch with the transmission gear has, at its forward end, a newly-designed universal joint of the yoke type especially suited to the greater angularity existing at this point than at the rear, where there is a roller universal joint. Both joints are effectively encased The speed-changing set, final drive and differential gears are all contained within a rigid aluminum housing, as in the 1907 models thus forming a unit. In the new design, the casting is internally ribbed, while the outside is smooth Independently of the live rear axle, the differential unit is supported on its own bearings. Thus the live axle may be withdrawn without disturbing the gears. Three forward speeds and a reverse are obtained by the sliding gears of the speed-changing set. The third speed forward is by direct drive. That the shifting of the sliding gears for different speeds may be easily and progressively accomplished, the actuating slide rod is annularly grooved to correspond with spring-retained spacing dogs which determine the respective correct positions of gear engagement. The reverse is obtained by a separate lever. All gears in the transmission, final drive and differential, as well as the rear axle, run on imported annular ball bearings.

Packard Internal Expanding Clutch, foot pedals and rear of the dash showing the two sight feeds and the lock switch on the coil box.

BRAKES

There are four brakes. On each rear wheel there is a brake drum, upon which act both the internal-expanding and the external-contracting brakes. The external brakes are operated by a pedal for regular use, while a side hand lever controls the internal or emergency brakes. A drum disc entirely encloses and protects each internal brake. This system of brakes obviates the use of braking power thru the change gears and insures quick, positive application of both foot and hand brakes. A new pedal design obtains a much shorter travel and greatly decreases the length of slots in the foot board

Steering is by the usual hand wheel, thru a worm-and-sector gear. The worm and sector are forged integrally with their respective shafts. The steering wheel has been increased in diameter and greater rigidity has been obtained by a large steering col-

umn. The steering spindles and yokes are drop forgings forming jaw, or what is known as Elliot type steering knuckles. To obtain greater ease of steering the length of the knuckle spindles has been increased. Imported ball thrust bearings are used in the knuckles, and all steering connections have provision for lubrication.

FRAME.

The running gear frame is of channel section prest steel, arched above the rear axle to provide increased spring action without raising the body. The top and bottom flanges of the side bars extend inwardly at certain points to form integral gussets for the reception of the four respective cross members. The frame is cold riveted thruout. There is no sub-frame. The frame is suspended upon four unusually wide, semi-elliptical springs. The rear ones are 56 inches long and the front ones 40 inches long. The front axle is of steel tubing of large diameter and heavy gage. The stationary sleeves of the rear axle are steel tubes prest into and riveted within flanged collars that are bolted to the differential and driving gear housing.

The wheel base is 123½ inches and the tread is 56½ inches. The wheels have been increased in diameter to 36 inches. They are of wood, of the artillery pattern. The front wheels have each ten spokes and the rear wheels twelve spokes. All wheels run on imported annular ball bearings of increased size. The front tires are 36 by 4 inches and the rear tires 36 by 4½ inches.

The "U. S." Model A, Gasoline Runabout

U. S. Motor Car Co., Upper Sandusky, Ohio, have just placed on the market a runabout propelled by a 12-H. P. gasoline, air-cooled, 3¼x3, 4-cylinder motor and are cataloging their first car as Model A. Ignition is by jump spark and a float feed carburetor is used. Oiling is by splash. The crank shaft is provided with 5 babbitted bearings. Speed changing is thru a sliding type speed change gear, which is ball bearing. Three forward and one reverse speed changes are provided. On the high speed the drive is direct with no gears in mesh. A double disk clutch of their own design is used which they claim starts the car smoothly without jerk and does not stick. Shaft drive is employed and a foot-operated service brake acts on the driving pinion shaft. Emergency brakes of the constricting band type operate on the rear hubs.

Four full elliptic springs support the body, each 40 inches long. The wheel base is 90 inches and the tread 56 inches. Wheels are 32 inches in diameter and the tires 3 inches cross section. A light, strong frame of selected hickory is used. Large wood fenders give ample protection from flying mud and do not rattle. The seats are of the individual type and are large and roomy and are fitted with soft edge cushions. A quick acting steering device is employed, operated by a hand wheel with throttle and spark levers on the steering post close to the driver's hand.

A roomy platform is provided in the rear of the body fitted with a double brass rail making it safe and convenient to carry parcels or a small trunk and thus adapting the car to light delivery service if desired.

The equipment consists of two oil side lamps, tool box on running board and full kit of tools. Price is $750.

It has been the aim of the makers to produce a light, easy riding car which would be economical of tire expense and they have also aimed to use the best possible material. Drop forgings are used wherever possible.

BODY.

The touring body, in its new combination with [illegible] wheels, has a longer [illegible] stable appearance and obtains individually by arched recesses in the rear seat panels to provide clearance for the rear wheels. The body is [illegible] over wood frame work. The seats are upholstered in black straight-grain leather, over curled hair and with spiral spring backing thruout. To provide greater comfort, the rear seat cushions have been increased in thickness, lowered and are differently sloped. The standard finish is Richelieu blue and cream yellow. The price, with standard finish and equipment, is $4200, f. o. b. factory.

As a limousine or landaulet, the chassis is identical with that of the touring car. In the case of the runabout, however, there are several differences in keeping with requirements. The wheel base is 108 instead of 123½ inches. The motor and driver's seat are placed farther back on the frame than in the touring car, thus making the bonnet longer and properly distributing the weight. The divided front seat is lower, relative to the floor. The gasoline tank holds 27 instead of 21 gallons and is placed at the rear of the frame. The gasoline feed to the carburetor is by simple, automatic pressure system. Above the gasoline tank is a rumble seat. The standard tire equipment is 36 by 3½ inches in front and 36 by 4 inches in the rear. There are no other notable differences between the runabout and the touring car.

Charles E. Duryea, pioneer automobile builder, has become engineer of the Corbin Motor Vehicle Corporation, New Britain, Conn.

According to the reports issued by Colonel E. S. Fowler, appraiser of the port at New York, there was a falling off in the importation of foreign cars during the period from January 1 to May 1, as compared with the previous year. The total during the past four months was 384 automobiles, valued at $1,261,206.52, compared with 452 automobiles during the same period last year, with a valuation of $1,464,862.13. During the month of April 108 machines were brought in in comparison with 152 during 1906.

BATH ROOM SUPPLIES.

SOAP DISHES

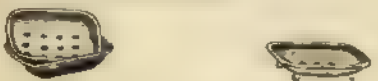
No. 134 No. 4000

All Brass, Heavily Nickel Plated.

No. 134—For washstands, 2¾×4¾ in., w't per doz. 3 lbs. per dozen, $6.00

No. 4000—For washstands, 3¾×4¾ in., w't per doz. 5 lbs. per dozen, 7.50

ONE DOZEN IN A BOX.



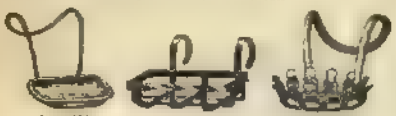
No. 4002 No. 4004

Extra Heavy Brass, Nickel Plated.

No. 4002—For washstands, 3¾×4¾ in., w't per doz. 6 lbs., per dozen, $ 9.00

No. 4004—For washstands, 3½×4¾ in., w't per doz. 9 lbs., per dozen, 12.75

½ QUARTER DOZEN IN A BOX.



No. 4007 No. 4019 No. 4023

Extra Heavy Brass, Nickel Plated.

No. 4023—For bath tubs, 3×5 in., w't per doz. 6 lbs., per dozen $ 7.50

No. 4019—For bath tubs, 3×5 in., w't per doz. 9 lbs., per dozen, 12.00

No. 4023—For bath tubs, 4×6 in., w't per doz. 12 lbs., per dozen, 15.00

NO. 4023 ONE SIXTH, NOS. 4007 AND 4019 HALF DOZEN IN A BOX.

No. 1075 No. 4006 No. 4009

No. 1075—Brass wire nickel plated, fastens to wall, 3 x 4 in., w't per doz. 2½ lbs., per dozen $ 3.00

Extra Heavy Brass, Nickel Plated.

No. 4006—To screw to wall, 3¾×4¾ in. w't per doz. 7 lbs., per dozen, 10.50

No. 4009—To screw to wall, 3×5 in., w't per doz. 9 lbs., per dozen, 16.50

NO. 1075 ONE DOZEN, NO. 4006 ONE SIXTH DOZEN, NO. 4009 ONE HALF DOZEN IN A BOX.

COMB AND BRUSH HOLDERS.

All Brass, Nickel Plated.

No. 111—4 × 4 × 2 w't per doz. 12 lbs., per dozen $14.00

ALF DOZEN IN A BOX.

COMB AND BRUSH HOLDERS

No. 4002 No. 4800

All Brass, Nickel Plated.

No. 4802—12½×5⅝×4 in., w't per doz. 12 lbs., per dozen $18.00

No. 4800—10 × 4½ × 2 in., w't doz. 16 lbs., 27.00

HALF DOZEN IN A BOX.

SPONGE OR BATH BRUSH HOLDERS

Brass Wire Nickel Plated.

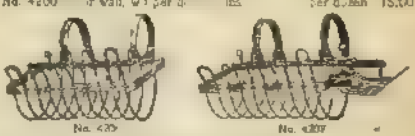
No. 1030—For bath tubs, 7×4½×4½ in., solid brass, nickel plated, w't per dozen, 2½ lbs. per dozen $ 7.50

No. 4200

All Brass, Nickel Plated.

No. 130—bath tubs, 3 × 5 in., w't per doz. 15 lbs., per dozen, $ 6.00

No. 4200—or wall, w't per doz. lbs. per dozen 15.00



No. 4205 No. 4207

A. Brass, Nickel Plated

No. 4206—For bath tubs 5×8 in., w't per doz. 15 lbs. per dozen, $15.00

No. 4207—For bath tubs, 6×8 in., w't per doz. 17 lbs. per dozen, 21.00

No. 4204 No. 4205

Extra Heavy, all Brass, Nickel Plated.

No. 4204—For bath tubs, 5 × 8 × 2½ in. w't per doz. 14 lbs., per dozen, $ 5.00

No. 4205—For bath tubs, [illegible] per doz. lbs., per dozen 21.00

ALF DOZEN IN A BOX.

BATH ROOM SUPPLIES.

PLATE GLASS SHELF COMBINATIONS

Trimmings All Brass, Nickel Plated.

No. 5333—24 × 5 × ¼ in. with brackets and removable soap dish, wt per doz. 20 lbs. per dozen, per dozen $108.00

ONE IN A BOX.

PLATE GLASS SHELVES.

Trimmings All Brass, Nickel Plated.

No. 5316—Glass, 24 × 5 × ¼ in. with bevel edges, wt per doz. 52 lbs. per dozen $39.00

ONE IN A PACKAGE.

EXPANSION BOLTS.

No. 4400 All brass nickel plated for fastening to tile or marble, wt per doz. 5 oz. per dozen $.

TOOTH BRUSH RACKS

All Brass, Nickel Plated

No. 5108—Fasten to wall, wt per doz. 3 lbs. per dozen $6.00

TOOTH BRUSH AND TUMBLER HOLDERS

No. [illegible] No. [illegible]

No. 1061 [illegible] wt per doz. 2 lbs. per $.

No. 511 Brass [illegible] per

No. 5159 [illegible] per doz. 6 lbs. per dozen 12.00

No. 1061, ONE DOZEN; NOS. 511 AND 5159, HALF DOZEN IN A BOX.

No. 171 No. 168 No. 5110

All Brass, Nickel Plated

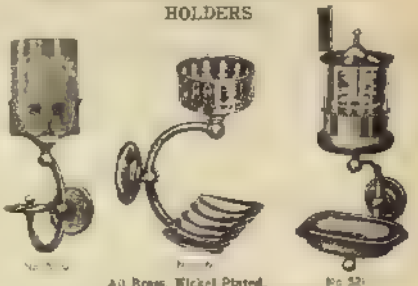
No. 171—Tumbler wt per [illegible] per doz. gen $10.00

No. 168—Tooth brush and [illegible] lbs. 12.00

No. 5110 T[illegible]sh, with tumbler complete, wt per doz. 8 lbs. 18.00

NOS. 171 AND 168, ONE DOZEN. NO. 5110, ONE IN A BOX.

TOOTH BRUSH, SOAP AND TUMBLER HOLDERS



No. 5122 No. 160 No. 521

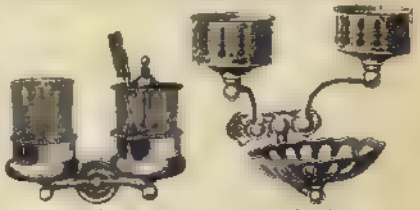
All Brass, Nickel Plated.

No. 5122—Tooth brush and [illegible] per [illegible] per doz. $17.00

No. 160 Soap and tumble[illegible] wt per [illegible] per doz. 24.00

No. 521 Soap and brush [illegible] wt per doz. 3[illegible] lbs. per dozen 10.00

NOS. 5122 AND 521, ONE IN A BOX. NO. 160, ONE SIXTH DOZEN IN A BOX.



No. 5210. No. [illegible]

All Brass, Nickel Plated.

No. 5210—Tumbler and tooth brush, wt per doz. 34 lbs. per dozen 33.00

No. 166—Tumbler and sponge or soap, wt per doz. 16 lbs. per dozen 40.00

NO. [illegible] ONE HALF DOZEN IN A BOX.

No. 5213 No. 5202

All Brass, Nickel Plated

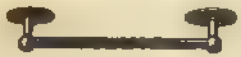
No. 5213—Soap, tooth brush and tumbler [illegible] per [illegible] 42 lbs. per dozen $54.00

No. 5202 Soap, tooth brush and [illegible] wt per [illegible] 42 lbs. per [illegible] 54.00

ONE IN A BOX.

BATH ROOM SUPPLIES.

TOWEL BARS.



All Brass, Nickel Plated, 1 Inch Heavy Bar, Brazed Joints.

Nos.	1636	1642	1648	
Length,	36	42	48 in.	
Weight	2¾	2¾	2¾ lbs	
Per dozen,	$48.00	54.00	60.00	

This bar, placed above the tank (of) will prevent many accidents, falls and will be a great aid to the heavy sick or aged. A superb fixture, and very desirable for hotels.

ONE IN PACKAGE

No. 1614.

No. 1518

Diameter ½ Inch. All Brass, Nickel Plated.

Nos.	1418	1424	1430	1436
Length,	18	24	30	36 in
W't per doz.,	6	7	8	9 lbs.
Per dozen,	37.50	9.00	10.50	12.00

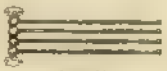
Diameter ½ Inch, Brazed Joints.

Nos.	1518	1524	1530	1536
Length,	18	24	30	36 in
W't per doz.,	9	11	12	14 lbs.
Per dozen	$10.00	12.00	14.00	16.00

HALF DOZEN IN A PACKAGE. SCREWS PACKED WITH EVERY PIECE

No. 20—12 in. nickel plated steel plate. Bessemer steel rods. weight per dozen 4½ lbs., per dozen $1 75

No. 2314



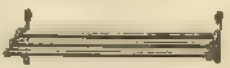
No. 2414

All Brass, Nickel Plated. Rail Ends.

No. 2314—2 bars 14×¾ in.	w't per doz. 14 lbs.,	per dozen $12 00
No. 2314—3 bars 14×¾ in.,	w't per doz. 20 lbs.,	15.00
No. 2414—4 bars 14×¾ in.,	w't per doz. 24 lbs.	18.00

HALF DOZEN IN A BOX

No. 4704



No. 4710

Extra Heavy ½ Inch Brass Tubing, Nickel Plated, All Joints Brazed.

No. 4700—2 bars 20 in.,	w't per doz. 10 lbs.	per dozen $21.00
No. 4701—3 bars 20 in.,	w't per doz. 15 lbs.	30.00

HALF DOZEN IN A BOX

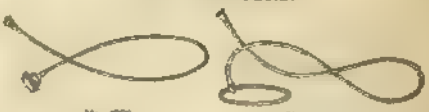
PORTABLE SHOWERS.

All Metal, Nickel Plated.

No. 5005—27×6×22½ in., 5 in. shower head, 21 in. curtain ring, 1 in. mixing column, wire grip faucet connection bulb to fit any size faucet, 6 ft. extra quality rubber connecting tube, rubber curtain, w't 25¼ lbs., per dozen $201.60

ONE IN A BOX

BATH SPRAYERS.



No. 4900. No. 4905.

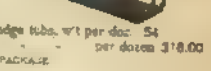
All Metal Work in Brass, 5 Foot First Quality ¼ Inch Rubber Tubing.

No. 4900—3 in. rose, single bulb, for faucet up to ¾ in., w't per [illegible] lbs., per dozen $13 50

No. 4905—3 in. shower ring, single bulb for faucet up to ¾ in., w't per doz. 20 lbs., per dozen 19.00

ONE IN A WOOD BOX

BATH TUB SEATS



Polished Oak, Nickel Plated Trimmings.

No. 1100—Adjustable to all roll edge tubs, w't per doz. 54 lbs., per dozen $18.00

ONE IN A PACKAGE

HAT AND COAT HOOKS.

No. 5505 No. 5507 No. 5501 No. 5502.

All Brass, Nickel Plated.

No. 5505—Projects 2¾ in.,	w't per doz. 2 lbs.,	per dozen $ 2.75
No. 5507—Height 4 in.,	w't per dozen 3 lbs.,	4.50
No. 5501—Extreme height 6 in.,	w't per doz. 4½ lbs.,	6.00
No. 5502—Height 9¾ in., width 10¾ in.,	w't per doz. 16 lbs., per dozen	27.00

HALF DOZEN IN A BOX

SPRAY OR RAZOR STROP HOOKS.

No. 5503—Spray or razor strop, brass, nickel plated, w't per doz. 2 lbs., per dozen $3.60

ONE DOZEN IN A BOX

BATH ROOM SUPPLIES.

TOILET PAPER HOLDERS

No. 5415

No. 5416

No. 5415—All brass, nickel plated, paneled design, enameled roll s[illegible] per dozen $ 6 00

No. 5416—All brass, nickel plated, extra heavy locks into bracket w't per doz. 14 lbs. per dozen 12.00

HELP SCREW IN A MYX

Nos. 5 and 8

No. 10

No. 5—[illegible] ball holder covered spring wire ba[illegible] w't per [illegible] lbs. per dozen $ 4 50

No. 8—Polished ball holder polished spring wire polished cones w't per doz. 6 lbs. per dozen 4.00

No. 10—Nickel plated spring ball, ball holder and cigar rest, nickel pa[illegible] w per doz. 12 lbs. per dozen 5 50

TOILET PAPER.

Sterilized.

No. 20—Small rolls 7½ oz. short count, ordinary grade w't per case 90 lbs. per case $ 6 00

No. 30—Large rolls, 10 oz. 1000 sheets full count, best quality w't per case 75 lbs. per case 12.00

TWINE BOXES

Nos. 20 and 30.

Nos. 25 and 35

No. 20—Copper bronzed, to hang, w't per doz 9 lbs. per dozen $2.50

No. 30—[illegible]panned, to hang, w't per doz 9 lbs. per dozen 2.50

No. 25—Copper bronzed, to stand or screw to the wall, w't per doz 5 lbs. per dozen 5.40

No. 35—[illegible]panned, to stand or screw to wall, w't per doz. 5 lbs. per dozen 5.40

No. 131 Bee Hive extra heavy, for counter w't per doz 30 lbs. per dozen 35.50

BOX, COTTON AND HAY HOOKS.

Cast Steel, Flattened Shank, Ebonized Handle.

No. 1	[illegible]	wt per doz. 7 lbs.,	per dozen	$2.10
No. 3	[illegible]	wt per doz. 7½ lbs.,		2.70
No. 5	[illegible]	wt per doz. 9 lbs.,	"	3.00
No. 7	[illegible]	wt per doz. 14 lbs.,		4.00
No. 15	[illegible]	short hook, wt per doz. 7 lbs.,		3.20

NO. 7 HALF DOZEN; BALANCE, ONE DOZEN IN A BOX

No. 4— 6x3½ in., Humason & Beckley's extra quality, cast steel, diamond pattern, maple handle, wt per doz. 6½ lbs., per dozen $5.00

BUNG BORERS.

Cast Steel, Polished Blade, Half Round, Hickory Handle

No. 12	Inches,	1⅜	1⅝	2
Wt per doz.,		12	15	16 lbs.
Per dozen,		$7.50	8.50	10.00

HALF DOZEN IN A BOX.

Enterprise Mfg. Co's, Cast Steel, Polished Blade, with Auger Point, Hickory Handle.

No. 1	Bores from ¼ to 1⅝ in. wt per doz. 12 lbs. per dozen,	$18.00
No. 2	Bores from 1⅝ to 2 in., wt per doz. 26 lbs., per dozen	24.00

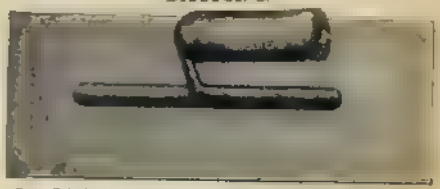
PLASTERING TROWELS.

AMERICAN.

Cast Steel, Polished, Drive Shank, Maple Handle

Length,	10	11	11½	12 in.
Width,	4½	4½	4½	4½ in.
Wt per doz.,	11	12	13	14 lbs.
Per dozen,	$6.50	7.50	8.00	9.00

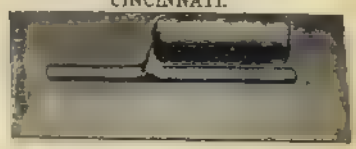
DISSTON'S.



"Sure Grip," Cast Steel Polished Blade, High Mounted, Drive Shank, Basswood Handle with Rubber Grip

No. 3— Inches,	10½	11	11½	12
Width,	4½	4¾	4⅝	5 in.
Wt per doz.,	13	3 [illegible]	5	[illegible] lbs.
Per dozen	$12.50	3.00	3.50	4.00

WOODROUGH & McPARLIN'S CINCINNATI.



Cast Steel, Polished, High Mounted, Drive Shank, Maple Handle

Length,	10½	11	11½	12 in.
Width,	4½	4¾	4⅝	5 in.
Wt per doz.,	12½	13	13½	14 lbs.
Per dozen,	$12.50	13.00	13.50	14.00

POINTING TROWELS.

American, Cast Steel, Polished, Solid Shank, Steel Ferrule, Beech Handle.

Blade,	4	4½	5	6 in.
Wt per doz.,	3	[illegible]	3 [illegible]	4 lbs.
Per dozen,	$2.95	3.00	3 [illegible]	3 [illegible]

BRICK TROWELS.

AMERICAN AND FARMERS'.

American.

Farmers.

American, London Pattern, Cast Steel Polished Blade Solid Shank, Steel Ferrule. Maple Handle.

Blade,	9	10	11	11½	12	13 in.
Wt per doz	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5 lbs
Per dozen,	$4 75	[illegible]	[illegible]	5 00	8 25	5 75

HALF DOZEN IN A BOX

10 in., Farmers pattern, cast steel blade, riveted shank, maple handle, weight per dozen 5 lbs. per dozen $3 00

ONE DOZEN IN A BOX

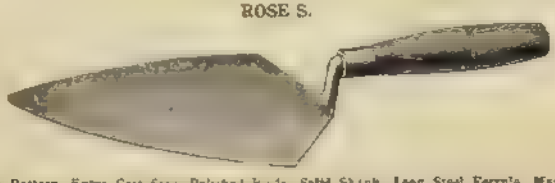
DISSTON'S

London Pattern, Extra Cast Steel Polished Blade, Solid Shank Steel Ferrule, Maple Handle

Blade,	10	11	11½	12	13 in.
Wt per doz.,	11	12	12½	13½	14 lbs
Per dozen,	$10.00	1.00	11 50	12.00	13.50

HALF DOZEN IN A BOX

ROSE S.



Philadelphia Pattern Extra Cast Steel Polished Blade Solid Shank Long Steel Ferrule, Maple Handle.

Blade,	10	10½	11	11½	12	13 in.
Wt per doz	12	13	13½	14	15	16½ lbs.
Per dozen	$13.25	13.75	14 25	14.75	15.25	16 25

HALF DOZEN IN A BOX

BRADES'

London Pattern Extra Cast Steel Polished Blade, Solid Steel Shank, Steel Ferrule Ash Handle.

Blade,	10	11	11½	12	13	14 in.
Wt per doz	8 [illegible]	9	10	1	12½	3 ½ lbs.
Per dozen	$ [illegible]	2 [illegible]	12 50	13 00	14 00	15.00

CEMENT TOOLS.

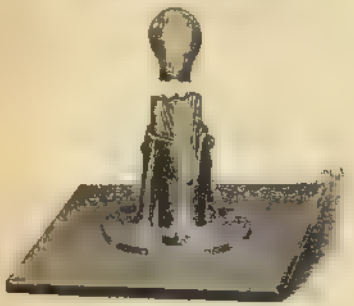
TUCK POINTERS.

Polished Steel, Wood Handles.

No.	1	2	3
Size,	[illegible]	[illegible]	[illegible]
Weight	[illegible]	[illegible]	[illegible]
each	[illegible]	[illegible]	[illegible]

These tuck pointers [illegible] are made of [illegible] steel and highly [illegible] and are [illegible] ground to a [illegible] point ready for use.

CEMENT TAMPERS.



No. 4—8×8 in. steel plate, malleable iron flange, with 3 ft. 7 in. oiled hardwood handle attached to plate, w't 14 lbs. each [illegible] $1.50

No. 5—10×10 in. steel plate, malleable iron flange, with 3 ft. 7 in. oiled hardwood handle, w't 18 lbs. each 2.00

SIDEWALK ROLLERS.

No. 6 [illegible] roller japanned iron handle, steel bearings, [illegible] japanned and highly polished, diameter [illegible] each 3.00

No. 7 [illegible] roller japanned iron handle, steel bearings, [illegible] strongly machined and highly polished, diameter 3 in., length 10 in., w't 16 lbs. each 5.00

HAWKS.

Hard Rolled Aluminum.

Nos.	1	2	3
Sizes,	13×13	13½×13½	14×14 in.
W't per doz.,	20	22	24 lbs.
Per dozen,	$30.00	31.00	32.00

These hawks are made of very hard rolled aluminum and weigh about the same as wood hawks of the same size. The handles are detachable, with a 6 in. flange and lugs extending ¾ in. to receive thread on handle, which makes the hawk very strong and durable.

PLASTERERS' FLOATING CORKS.

Made from One Thickness of Cork, Carefully Smoothed on Both Sides.

No. 5—12×6×1½ in., w't per doz. 6 lbs., per dozen $10.20

No. 6—12×6×1¼ in., w't per doz. 7 lbs., 12.00

CORNER TROWELS.

6 inch American, cast steel polished, riveted, ovaloid handle, w't per doz. 5 lbs. per dozen $7.50

CEMENT TOOLS.

SIDEWALK EDGERS.

No. 01—6x3 in., steel, nickel plated and polished, curve of ½ in. radius, w't 1 lb., - - - - each $1.00

No. 02—6x3 in., steel nickel plated and polished curve of ½ in. radius, w't 1½ lbs., - - each 1.25

These edgers are very carefully ground to produce a perfect working corner carrying curve to enclose edge, not leaving a rough corner projecting

SIDEWALK GROOVERS.

No. 10—5½x2¾ in. steel, nickel plated and polished w't 1 lbs. - - each $ 0[illegible]

Both corners square at both ends. The end corners square off and have a ¼ in. radius edge and will work to the inside both ends, as the groove is very near the end

No. 12—5½x2¾ in. steel, nickel plated and polished w't 1 lb. - - each $ 00

This groover is square at one end and will enable users groove right into corners. Has two sharp corners

The above are excellent accuracy of shape, light and durability. They are nickel plated and polished and proportions. The handles are so attached that they will never become loose

SIDEWALK GROOVERS.

No. 15—5½x2¾ in. steel, nickel plated and polished w't 1¾ lbs. each $ 50

Just the width for the groove as ordered to the inside. Is very strong, well constructed of steel, and will do fine work. Is carefully shaped and curved at both ends

No. 16—5½x2¾ in., steel nickel plated and polished, w't 1¾ lbs., - - - - each $1.50

This groover is square at one end and will enable users to [illegible]

CARRIAGEWAY GROOVERS.

No. 4.

No. 13—5½x2¾ in. steel, nickel plated and polished, curved at both ends, w't 1 lb., - - - - each $ 5

No. 14—5 in. steel, nickel plated and polished, square at one end w't 1 lb., - - - each 1 5

DRIVEWAY GROOVERS.

No. 17—6x2¾ in. steel, nickel plated and polished, curved both ends, w't 2 lbs. - - - - each $ 50

Use a groover makes perfectly rounded grooves that offer a perfect hold for horse shoes and will do not slip or become rough with wear

See That Your A Genuine COES

for you will never have to buy another in a lifetime unless it is stolen or lost, for GENUINE COES WRENCHES are made upon honor and last for all time. The price argument does not exist, because, while the quality is 30 per cent. higher, the cost is but 5 per cent. more, and if this 5 per cent. stands in your way, you are practising false economy to the extent of 25 per cent. Don't let any salesman, for the sake of a larger profit for himself, endeavor to induce you to buy "just-as-good as-a-Coes," or a "Coes-pattern" or a "better-and-cheaper(?)-than a-Coes," or anything that is a substitute, for the COES WRENCH is of known quality, and to the well-informed buyer there is no substitute at any price.

Remember, we have been making COES WRENCHES for seventy years, and we have learned how to make them right in two generations.

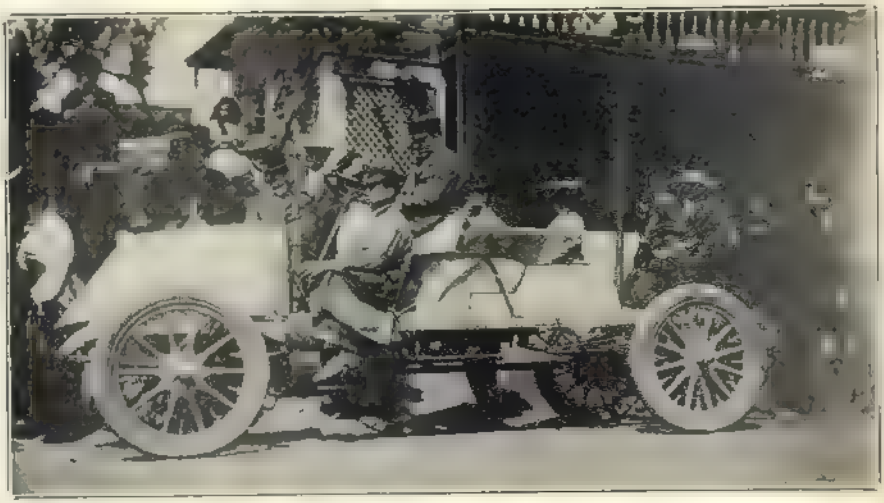
COES WRENCHES are made in five styles and forty-nine sizes, which range from 4 to 48 inches,—one or more of them will meet your wrench needs. They are made with very few parts, and are put together to last. They can be carelessly handled without being injured. This is a test which other wrenches cannot pass satisfactorily.

WRITE FOR OUR WRENCH BOOK.

Coes Wrench Com

THE INCOMPARABLE WHITE

THE CAR FOR SERVICE



Fastest Time in Wilkes-Barre Hill-Climb

In the Wilkes-Barre Hill-Climb, held on May 30th, a stripped 30 horse-power Model "G" White Steamer made the climb up "Giant's Despair" in 1:49⅘. This time is ten seconds faster than the best record made by a gasoline car. Practically all of the more prominent makes of cars were represented, there being over 50 contestants in this classic event.

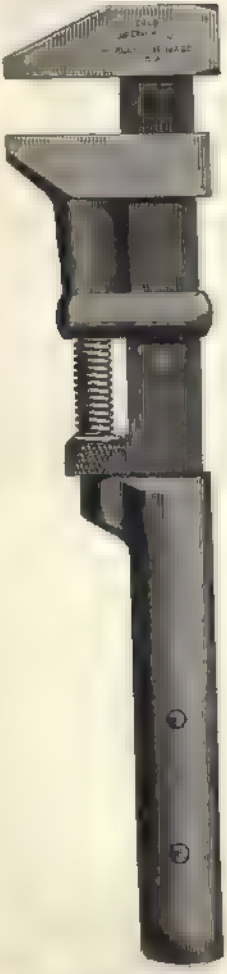
Our record was made in a trial against time. We could not compete against anything else because the Contest Committee of the Wilkes-Barre Automobile Club barred us from all the regularly scheduled events, including the "free for all," because, as the President of the Wilkes-Barre Automobile Club informed us, in a formal letter returning our entries, "It was found that a large number of gasoline entries could not be received were steam cars allowed to compete in the gasoline events."

THE WHITE COMPANY

CLEVELAND, OHIO

Outfit Contains WRENCH

Where other wrenches fail, COES WRENCHES have demonstrated their superiority. We are now selling to the largest automobile manufacturers, jobbers, and dealers, but we would like to add every reliable firm to our list as we know that the COES WRENCH will replace in value received to the purchaser many cast iron fork wrenches and many other special wrenches of various sizes.



If you run a Garage or make or own an Auto, you need these wrenches.

The Key Model

(Right Cut)

28 in. and 36 in long, largest nut wrench made; strong, unbreakable, handy and cheap.

The Steel Handle

(Left Cut)

in seven sizes—from 4 in. to 21 in. Heat, damp and wear proof. Steel handle 30 per cent. stronger, size for size than any imitation or substitute.

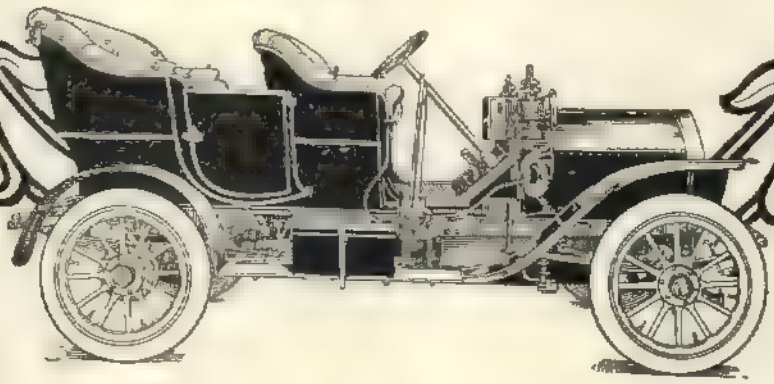
Now is the time the automobilist should be careful to get the right wrench for his tool-kit. Don't fuss and fume all summer because your wrench won't stand abuse. Start the season right, and get a COES without delay. If your dealer hasn't it, give us his name and address, and we will see that you get the GENUINE COES.

pany Worcester, Mass.

KNOX

Go into details

on every other car of its price, ($2500) and compare them with the Model "H" Knox Waterless—and we shall write the receipt for you. It is a "thoughtful" car, full of extraordinary merit. Nothing superfluous, nothing missing, and all that there is the best. It is essentially an owner's car, simple, durable, handy, and as nearly as possible, troubleless, with more horsepower per pound than any other car in its class.



Specifications: 25-30 road horsepower; weight 2250 lbs.; 32″ x 4″ tires; 102″ wheelbase; automatic oiling; three speed selective transmission; deadstop brakes; compensating carbureter; straight line shaft drive; price, $2500. With detachable tonneau and torpedo deck, $2550. Let us send you our 1907 illustrated catalogue, or, better still, arrange for a demonstration.

KNOX AUTOMOBILE COMPANY

Member A. L. A. M.

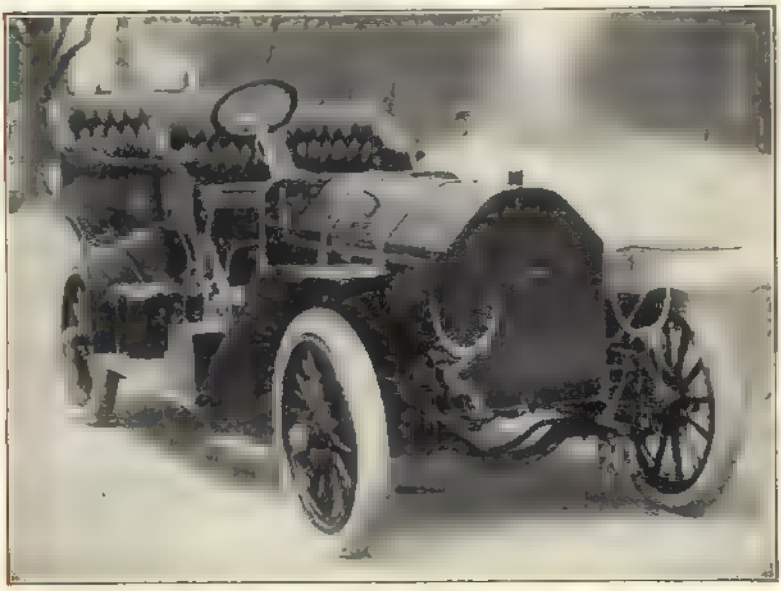
Springfield, Mass.

Our 1907 output is sold, and we are now delivering 1908 models of the

VICTORIOUS

Great Chadwick Six

On Decoration Day it flashed up Giant's Despair mountain at Wilkes-Barre, Pa., defeating all foreign and American touring cars by so great a margin as to startle competitors



6 cylinders, 5" bore and 6' stroke Weight, exactly 3000 lbs.
Price, F. O. B., Philadelphia, $5,500.

WHAT WE HAVE AND HOW WE PROVE IT.

Twelve Claims with One Dozen Facts to Substantiate Them.

1. We have the most successful six cylinder touring car in the world
2. " " " " powerful " " " " " " "
3. " " " " fastest " " " " " " "
4. " " " " strongest " " " " " " "
5. " " " " safest " " " " " " "
6. " " " simplest high-powered touring car in the world.
7. " " " lightest " " " " " " "
8. " " " quietest " " " " " " "
9. " " " most easily-controlled high-powered touring car in the world.
10. " " " " dependable " " " " " " "
11. " " " " advanced type of " " " " "
12. " " " " luxurious " " " " "

On the next two pages are the facts to substantiate the above statements.

No. 1. It is the Most Successful

because it is the only high-powered six-cylinder car having a wheel-base as short as the representative, high-class four-cylinder cars, and therefore can be handled as readily on narrow roads and crowded streets. Passenger space has not been sacrificed, and the short wheel-base is obtained because of Chadwick motor construction, which admits of great power in compact space with all motor parts very accessible.

No. 2. It is the Most Powerful

because it has six cylinders, 5 x 6", and the weight is just 3,000 pounds.

No. 3. It is the Fastest

First because the motor is much more powerful, total car weight considered, than that of any touring automobile built regardless of price. Second, because Chadwick chain housings and full system of imported ball bearings minimize loss of power between motor and driving wheels to an incomparable degree.

No. 4. It is the Strongest

because the Chadwick design eliminates superfluous weight, and gives to the running gear that strength which is requisite for great power. The weight being but 3,000 pounds, additional material does not have to be added to carry the car's own freight.

No. 5. It is the Safest

car because it is designed for rough, hard work over American roads. The material is absolutely the best obtainable, and the workmanship unsurpassed. The axles are chrome nickel steel, drop forged in one piece. The frame is of chrome nickel steel reinforced. The springs are of the best oil tempered Swedish steel; and the steering gear,—one of the few which is really irreversible. The brakes are quick, strong and efficient, and the control practically on one gear because of great power. There is fitted on the steering wheel a magneto switch, which, by pressing a button, will act as a brake and disconnect the power.

No. 6. It is the Simplest High-Powered Touring Car

because of the mechanical refinement which eliminates all unnecessary parts, and so installs all necessary parts that they are easily accessible.

No. 7. It is the Lightest High-Powered Touring Car

First, because of the Chadwick dual unit system of casting motors, which are completely enveloped in a copper water jacket. Second, because of lower speed in transmission being actuated through one single chain of spur gears, thus permitting of short shafts, close bearing centres and hence a small unit. Third, because axles, frame, counter-shaft and other vital parts are chrome nickel steel, which contributes materially to reducing weight.

No. 8. It is the Quietest High-Powered Touring Car

First, because of perfect valve action. Second, because of Chadwick's patented change speed system, which involves the use of only one chain of gears at one time, and last, but not least, the patented system of housing the driving chain with aluminum, oil-tight cases, which are not disturbed for chain adjustment.

No. 9. It is the Most Easily Controlled

because you can go from zero to 70 miles on the high-gear, because the enormous power plant of the Chadwick car develops sufficient power at extremely low motor speeds to enable operation on high gear under the most severe road conditions.

No. 10. It is the Most Dependable

car for the reasons above set forth, such as strength, safety, simplicity, lightness and easy control, together with the highest grade material obtainable and superior workmanship

No. 11. It is the Most Advanced Type

because there is no car made in Europe or America to-day that possesses an equal number of points of merit. It is the most successful six-cylinder touring car, it is the most powerful, the fastest, the strongest, the safest, the simplest, the lightest, the quietest, the most easily controlled, the most dependable and of the most advanced type, consequently Chadwick construction incorporates more important, exclusive features than any three motor cars manufactured. There is nothing that approaches it. It is true it will be copied, but only when too late, as "Chadwick" is synonymous with originality and will therefore always lead.

No. 12. It is the Most Luxurious

because the body is made of aluminum and hickory. The upholstery is genuine French hand-buffed with satin finish leather. The body or carriage work and refinement of exterior in minute detail is the best money can procure.

The Great Chadwick Six

is the car which is being bought this year by the well-informed and discriminating buyer whose experience enables him to recognize superior quality and who will have nothing but the best. Next year the GREAT CHADWICK SIX will be bought by the same class of buyers, plus the "follow-the-leaders." While it is better to be late than not at all, it is still better not to be at all late.

Notwithstanding the fact that the demand for this already famous model is tremendous, we can make reasonably prompt deliveries, as we are early with our 1908 models.

Remember, the GREAT CHADWICK SIX is not a racing car. It is a comfortable, safe, practical touring car, having all the advantages of great speed, power, strength and mechanical refinement of detail of the best Vanderbilt Cup Racers, with the added advantages of comfort and luxury to be had only in the most expensive, high-class touring cars.

We are soon to start on a tour through the United States with our original demonstrating car, which won the great touring car events in the Wilkes-Barre hill-climb, and are prepared to prove to you in your city, on your roads and hills that the GREAT CHADWICK SIX, in comparison with any other touring car made in any country in the world is all that we have claimed for it in this and our other advertisements.

If you are sufficiently interested to the extent of investigating, we can convince you. If you want to know when the car will be in your city, write us, and we will tell you.

Agencies in many of the large cities.

Chadwick Engineering Works

3207 Spring Garden St., Philadelphia

CHRYSOLITE ENAMELED WARE.

SILVER MEDAL AND DIPLOMA, WORLD'S FAIR, PARIS, 1900

Three Coats of Enamel. Outside Green with White Vein Markings, Inside White, Edge Deep Blue.

FLAT BOTTOM COFFEE BOILERS

Enameled Cover, Tinned Ball, Blue Handle.

Nos.	60	70	80	90
Quarts	4	5	6½	11½
Size	8½x8¼	8½x9	9½x9¾	10¾x10½
Wt. per doz.	[illegible]	½	9	48 lbs.
Per dozen	$ 6.00	8.00	21.00	44.00

PIT BOTTOM COFFEE BOILERS.

Enameled Cover, Tinned Ball, Blue Handle.

Nos.	600	700	800	900
Quarts	4	5	7	11
Size	8½x8¼	8½x9	9½x9¾	10¾x10½
Wt. per doz.	[illegible]	[illegible]	[illegible]	[illegible]
Per dozen	$ 6.00	[illegible]	21.00	[illegible]

MILK OR RICE BOILERS.

Enameled Cover, Blue Handles.

Nos.	16	18	20	22	24
Quarts, steamer	1½	2	2½	3	3½
Size	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wt. per doz.	[illegible]	[illegible]	[illegible]	46	[illegible]
Per dozen	$12.00	[illegible]	17.00	20.00	22.50

LIPPED COFFEE POTS.

Seamless, Enameled Cover and Hollow Handle.

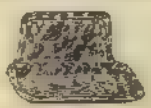
Nos.	9½	11½	12½
Quarts	1	1½	2
Size	[illegible]	5½x6¾	5½x6¾ in.
Wt. per doz.	[illegible]	15	6 lbs.
Per dozen	39.00	10.50	11.50
Nos.	13½	14½	15½
Quarts	3	4	5
Size	5x7½	6½x7¾	6⅞x8¼ in.
Wt. per doz.	21	24	27 lbs.
Per dozen	$ 3.50	15.00	17.00

TEA POTS.

Seamless, Enameled Cover and Hollow Handle.

Nos.	9	11	13
Quarts	1	1½	2
Size	4½x6¼	5x6¾	5½x6¾ in.
Wt. per doz.	[illegible]	15	18 lbs.
Per dozen	$9.00	10.50	12.50
Nos.	13	14	15
Quarts	3	4	5
Size	5x7½	6½x7¾	6⅞x8¼ in.
Wt. per doz.	21	24	27 lbs.
Per dozen	$ 3.50	5.00	17.00

WALL SOAP DISHES.



No. 60 [illegible] per doz. $4.00

[illegible] CASE

CHRYSOLITE ENAMELED WARE.

SILVER MEDAL AND DIPLOMA, WORLD'S FAIR, PARIS, 1900.

Three Coats of Enamel, Outside Green with White Vein Markings, Inside White, Edge Deep Blue.

LIPPED PRESERVING KETTLES.

Tinned Bail.

Nos.	140	160	180	200
Quarts,	1½	2	2½	3
Size	6⅛×3½	7⅛×3½	7½×3½	8⅛×3½ in.
W't per doz.	9	12	15	16 lbs.
Per dozen,	$3.50	4.00	5.00	6.00
Nos.	**220**	**240**	**260**	**280**
Quarts,	4	5	6	8
Size	9⅛×4	9⅛×4⅛	10⅛×5	11⅛×5⅜ in.
W't per doz.,	18	21	25	30 lbs.
Per dozen,	$7.00	8.00	9.00	10.50
Nos.	**300**	**320**	**340**	**360**
Quarts,	10	12	13½	15
Size,	11⅞×5½	2½×5	13½×5½	13¾×6½ in.
W't per doz	36	40	43	45 lbs
Per dozen	$12 50	5 00	7 00	8 00

TWO DOZEN IN A CASE.

STRONG LIPPED SAUCE PANS.

Nos.	14	16	18	20
Quarts,	1½	2	2½	3
Size	6⅛×3½	7⅛×3½	7½×3½	8⅛×3½ in.
W't per doz.	9	12	15	16 lbs.
Per dozen,	$3.50	4.00	5.00	6.00
Nos.	**22**	**24**	**26**	**28**
Quarts,	4	5	6	7½
Size,	9⅛×4	9⅛×4⅛	10⅛×5	11⅛×5⅜ in.
W't per doz.,	18	21	25	33 lbs.
Per dozen,	$7.00	8.00	9.00	10.50

NOS. 4 AND 14, FOUR DOZEN; NO. 16, THREE DOZEN; BALANCE TWO DOZEN IN A CASE.

MILK PANS.

Seamless, Straight.

Nos.	½	1	1½	2
Quarts,	½	1	1½	2
Size	6×1⅛	6⅜×1⅜	7⅝×2⅛	8⅛×2⅛ in.
W't per doz.,	5	5½	7	8 lbs.
Per dozen,	$2.25	2.50	3.00	3.50
Nos.	**3**	**3½**	**4**	**5**
Quarts,	3	3½	4	5
Size,	8⅛×2⅜	10×2⅜	10⅜×2⅝	11⅜×2⅜ in.
W't per doz	9	13	17	9 lbs.
Per dozen,	$4.00	4.50	5.00	5.50
Nos.		**6**	**8**	**10**
Quarts,		6	8	10
Size		12⅛×2⅜	13⅝×2⅜	14⅛×3 in.
W't per doz		21	26	28 lbs
Per dozen.		$6.00	6.75	8.00

NOS. 1 TO 5, SIX DOZEN; NOS. 6 TO 8, THREE DOZEN IN A CASE.

PUDDING PANS.

Round.

Nos	16	17	18	19
Quarts	4	4	2	3
Size,	7⅛×2½	7½×2⅜	8⅜×3	9¼×3⅜ in
W't per doz	7	9	11	13 lbs
Per dozen,	$3.00	3.50	4.00	4 50
Nos		**20**	**21**	**22**
Quarts,		4	5	6
Size,		10⅛×2⅜	11×2⅜	11⅜×2⅜ in.
W't per doz.,		17	19	22 lbs.
Per dozen.		$5.00	5 50	6 50

SIX DOZEN IN A CASE.

CHRYSOLITE ENAMELED WARE.

SILVER MEDAL AND DIPLOMA, WORLD'S FAIR, PARIS, 1900

Three Coats of Enamel, Outside Green with White Vein Markings, Inside White, Edge Deep Blue.

DRINKING CUPS.

Flaring.

Nos.	8	9	10	11
Size,	3⅛×3¼	4×3	4⅝×2⅝	4⅝×2⅝ in.
W't per doz.,	2¼	2¾	3	[illegible]
Per dozen,	$1 75	2 00	2.25	2 50

TWELVE DOZEN IN A CASE

Straight.

No. 6—3⅛×2½ in., w't per doz. 3 lbs. per dozen $1 75

TWELVE DOZEN IN A CASE

MINERS' CUPS.

No. 100—1 qt., size 4⅜×5¾ in., w't per doz. 9 lbs., per dozen, - - - - - - - $4.75

DISH PANS.

Extra Deep, Blue Handles.

Quarts,	16	14	12
Size,	14½×5	16⅜×5⅛	17½×5⅛ in.
W't per doz.,	36	43	52 lbs.
Per dozen,	$12.50	15.00	17 50

Quarts,	21	20
Size,	19½×6	21×6⅛ in.
W't per doz.,	60	72 lbs.
Per dozen,	$20.00	30.00

CUPS AND SAUCERS.

No. 0½—Cups, 4×2 in., w't per doz. 3 lbs., - per dozen $2.00
No. 0½—Saucers, 6½×½ in., w't per doz. 3 lbs., - 2.00
No. 01½—Cups and saucers, w't per doz. 6 lbs., - 4.00

SPITTOONS.

Removable Top.

No. 28—9⅛×4¼ in., w't per doz. 20 lbs., - per dozen $10.00
No. 30—11 ×5¼ in., w't per doz. 36 lbs., " 13.00

THREE DOZEN IN A CASE

CUSPIDORS.

No. 4—7½×4⅛ in. w't per doz. 2 lbs., per dozen $1.00
No. 5—8½×5⅛ in. w't per doz. 6 lbs. 1.50

THREE DOZEN IN A CASE

WASH BOWLS.

Nos.	24	26	28
Size,	9⅜×2¾	10½×2¾	11×3 in.
W't per doz.,	10	11½	13 lbs.
Per dozen,	$3.50	4.00	4.50

Nos.	30	32	34
Size	11¾×2⅝	12½×3⅛	14¼×3⅛ in.
W't per doz.	14	16	24 lbs.
Per dozen	$5.50	6.50	8.50

ROYAL ENAMELED WARE.

Color Gray, One Coat of Enamel on Steel, Patented Process.

CUP DIPPERS.

Flat Handle

Nos.	8	9	10	11	12
Size	3½x2	[illegible]	4½x3	[illegible]	[illegible]
Wt per doz.	4½	[illegible]	[illegible]	[illegible]	[illegible] lbs.
Per dozen	$4.50	[illegible]	6.00	.00	[illegible]

TWELVE [illegible] IN A CASE

WINDSOR DIPPERS.

Improved Round Handle

Nos.	110	112	114
Quarts	1	2	3
Size	5x2½	5½x3	6x4½ in.
Wt per doz.	5	6	7 lbs.
Per dozen	$7.00	8.00	.00

TWELVE DOZEN IN A CASE

COCOA SHAPED DIPPERS

No. 53—1 pt., size 3¼x3½ in. enameled wood handle, per doz. 10½ lbs. per dozen $1.00

TWELVE DOZEN IN A CASE

DRINKING CUPS.

Seamless.

Nos.	8	9	10	11
Pints	[illegible]	[illegible]	[illegible]	1½
Size	3 [illegible]	[illegible]	4 [illegible]	4 [illegible]
Wt per doz.	2	2	[illegible]	[illegible]
Per dozen	$1.50	[illegible]	[illegible]	[illegible]

TWELVE [illegible] IN A CASE

SEAMLESS STRAIGHT CUPS.

Nos.	0	6	120	14
Pints	[illegible]	[illegible]	2	4
Size	[illegible]	[illegible]	[illegible]	[illegible]
Wt per doz.	[illegible]	[illegible]	[illegible]	[illegible]
Per dozen	$4.50	5.00	[illegible]	[illegible]

[illegible] DOZEN BALANCE [illegible] IN A CASE

MINERS' CUPS.

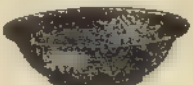
Seamless. Hollow Handle.

No. 100 [illegible] per dozen

No. 200 [illegible] per dozen

[illegible] IN A CASE

WASH BOWLS.



White Enamel

No.	24	28	[illegible]	[illegible]	32	34
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

THE [illegible] IN A CASE

VISES.

COLUMBIAN MACHINISTS'.

Nos. 62 to 67

Nos. 71 to 75.

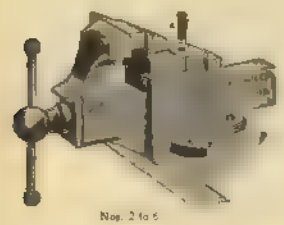
Stationary Base, Polished Steel Faces, Milled and Fitted.

Nos.	62	63	64	65	66	67
Jaws,	3¼	3½	4½	4½	5	6 in.
Open,	4⅝	5	5⅝	6⅝	7⅛	9½ in.
Weight,	32	40	53	68	84	200 lbs.
Each,	$6.00	7.00	8.50	10.00	12.00	25.00

Swivel Base, Polished Steel Faces, Milled and Fitted.

Nos.	71	72	73	74	75
Jaws,	2⅜	3¼	3⅝	4½	4⅝ in.
Open,	4	4⅝	5	5½	6½ in.
Weight	26	36	43	56	72 lbs.
Each,	$5.50	7.50	8.75	10.50	12.50

PRENTISS MACHINISTS'.



Nos. 2 to 6

Nos. 19 to 23.

Stationary Base, Self-Adjusting Back Jaw, Polished Faces, Milled and Fitted.

Nos.	2	2½	3	4	5	6
Jaws,	3½	4	4½	5½	6	7 in.
Open,	4¾	5¼	6	8	9	11 in.
Weight,	42	61	84	136	206	364 lbs.
Each,	$5.50	6.50	10.50	17.00	24.00	50.00

Swivel Base, Self-Adjusting Back Jaw, Polished Faces, Milled and Fitted.

Nos.	19	19½	20	21	22	23
Jaws,	3½	4	4½	5½	6	7 in.
Open,	4¾	5¼	6	8	9	11 in.
Weight,	42	66	85	139	208	367 lbs.
Each,	$8.50	9.50	12.50	19.00	27.00	55.00

VISES.

PARKER'S VICTOR.

Stationary Base, Self-Adjusting Back Jaw, Polished Steel Faces, Milled and Fitted.

Nos.	370	371	372	373	375
Jaws,	3¼	3½	4½	5	6¼
Open,	3½	5	6	7	9½
Weight,	26	39	57	73	150 lbs
Each,	$6.50	7.00	10.00	14.00	24.00

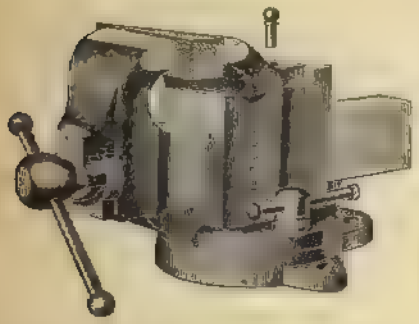
COMBINATION

Swivel Base, Round and Piper's Jaws, Milled and Fitted.

No. 7 3½ in. jaws, opens 5 in., adjustable for 3 in. pipe and under; wt 36 lbs., each $16.00

No. 8—4½ in. jaws, opens 6 in., adjustable for 3 in. pipe and under; wt 57 lbs., each 20.00

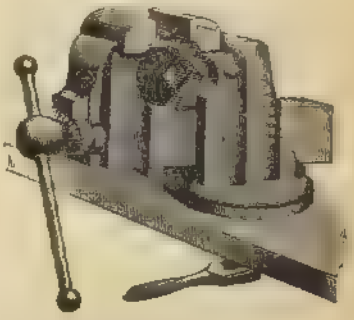
The weight and strength of the construction of these vises are to a high standard and very large, insuring strong workers where strength is most required.



Swivel Base, Self-Adjusting Back Jaw, Polished Steel Faces, Milled and Fitted

Nos.	270	271	272	273	275
Jaws,	3¼	3½	4½	5	6¼ in.
Open,	3½	5	6	7	9½ in.
Weight	30	42	60	78	165 lbs.
Each,	$7.00	8.50	12.50	16.00	27.00

PARKER'S COMBINATION.



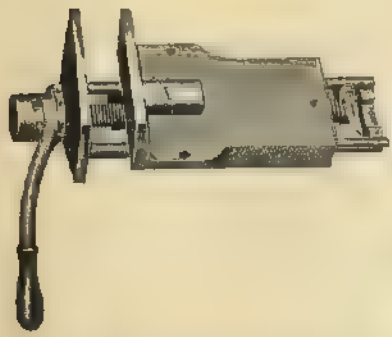
Swivel Base, Polished Steel Faces, Round and Piper's Jaws, Milled and Fitted.

No. 87 3½ in. jaws, adjustable for 2 in. pipe and under, opens 4¼ in., wt 41 lbs., each $ 6.00

No. 88—4½ in. jaws, adjustable for 3 in. pipe and under, opens 6¼ in., wt 59 lbs., each 20.00

VISES.

SHELDON'S WOODWORKERS'.



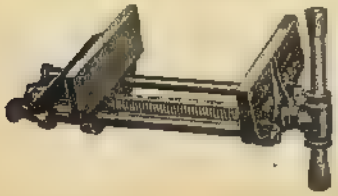
Rapid Acting, Rigid Jaws, Forged Steel Rack, Accurately Milled, 3-16 to 5-16 Inch Thrust.

No. 24—3x7 ½ in. jaws, opens 9 in., wt 25 lbs. each $4.90
No. 23—3x7 ½ in. jaws, opens 8½ in., with steel dog for holding wide materials, wt 26 lbs. each 5.10

MASSEY'S WOODWORKERS'

No. 17—Lightning, 9 in. jaws, opens 12 in., wt 49 lbs. each $5.00

TOLES' WOODWORKERS'



No. 120—Rapid acting, flush, 10x4 in. jaws, opens 12 in., 1¼ in. screw, wt 38 lbs. each $6.50

BONNEY'S CHAMPION.

Polished Jaws, Covered Wrought Iron Screw.

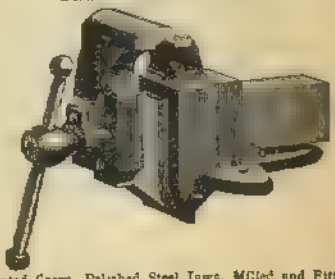
Nos.	112	113	114	115	121
Jaws	1¾	1¾	2	2½	3 in.
Opens	1¾	1⅞	2¾	3	2½ in.
Wt per doz.	15	21	30	45	90 lbs.
Per dozen	$4.50	6.50	9.00	13.00	24.00

PARKER'S OVAL SLIDE.

Polished Jaws, Covered Wrought Iron Screw.

Nos.	30	31	32	33	34
Jaws	2⅛	3	3½	3½	4 in.
Opens	3½	4	4	3½	4 in.
Weight	9½	13	19	22	27 lbs.
Each	$2.70	3.30	4.20	4.50	6.50

PARKER'S PARALLEL.

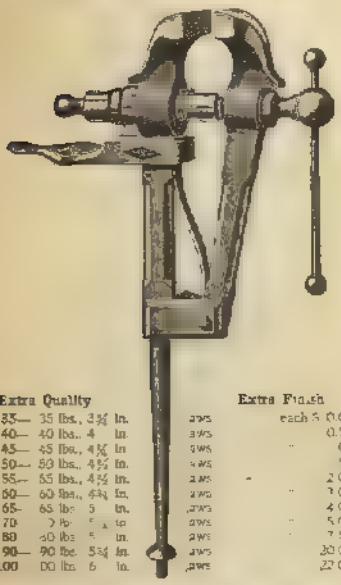


Painted Green, Polished Steel Jaws, Milled and Fitted

Nos.	0000	100	200	300
Jaws	3¼	3½	4⅛	4¾ in.
Opens	4	4⅛	5	5¾ in.
Weight	23	31	41	59½ lbs.
Each	$5.50	6.50	8.50	0.75

No. 0000 is the same as Nos. 100, 200 and 300 but without the wrought iron strengtheners or any of Parker's patented improvements.

SOLID BOX VISES.



	Extra Quality		Extra Finish
No. 35—	35 lbs., 3¾ in.	jaws	each $ 0.00
No. 40—	40 lbs., 4 in.	jaws	0.50
No. 45—	45 lbs., 4¼ in.	jaws	00
No. 50—	50 lbs., 4½ in.	jaws	50
No. 55—	55 lbs., 4¾ in.	jaws	2 00
No. 60—	60 lbs., 5¼ in.	jaws	3 00
No. 65—	65 lbs. 5 in.	jaws	4 00
No. 70	70 lbs. 5¼ in.	jaws	5 00
No. 80	80 lbs. 5½ in.	jaws	7 50
No. 90—	90 lbs. 5¾ in.	jaws	10 00
No. 100	100 lbs. 6 in.	jaws	12 00

BLACKSMITHS' DRILLS.

No. 12 ... length 30 in., 1½ in. screw, 1 in. square hole in mandrel, weight 210 lbs. ... each $6.00

The mandrel is not made to take standard drills, but must be fitted by the purchaser.

ANVILS AND VISES.

CABINETMAKERS'.

No. 4000 PARKER'S, 4 in. jaws, opens 8 in., ¾ in. screw, weight 78 lbs., ... each $10.00

CHENEY'S.

Self-Adjusting Back Jaw, Tempered Steel Faces, Chilled Steel Anvil, Smooth Face, Solid Steel Hardy or Cutting-Off Tool.

Nos.	20	30	40
Face,	[illegible]	6½ x 2½	8 x 2¾ in.
Jaws,	[illegible]	3¾	4 in.
Opens	4	5	6 in.
Weight	23	42	56 lbs.
Each	$4.50	5.50	6.50

The face side of the vise is self-adjusting and is operated by a powerful action to grip work and makes firm the front jaw, whether it be straight or tilted or work tapered.

ONE IN A CRATE

TRENTON FORGED ANVILS.

Factory Shipments.

We carry sizes 80 to 150 lbs. in stock but can furnish larger or smaller sizes from factory when desired, in which case prices will be F. O. B. factory.

F. O. B. Factory.

Sizes 35 and smaller, per pound	$0.24
Sizes 40 to 50, "	22
Sizes 50 to 60, "	2
Sizes 60 to 70, "	20
Sizes 70 to 80, "	19
Sizes 80 to 440, "	18
Sizes 440 and over, "	19

Forged in Two Pieces and Welded at the Waist, Face One Piece of Special Grade Finest Tool Steel, Tempered to Prevent Chipping.

Stock Sizes—80, 85, 90, 95, 100, 110, 115, 120, 125, 135, 140 and 150 lbs., ... per pound $0.18

The perfectly shaped horn and long taper base bring every square inch of working surface of work in being close up to the anvil at any point or bend. Does not require sloping down, will set firmly without toeing or rocking, and combines a most practical and graceful shape with the least amount of weight possible.

Guaranteed. The anvil you receive is subject to our inspection before using, and if found defective, it will be replaced without charge. All claims will be referred to the manufacturers. These anvils are tempered in a manner to suit the majority of smiths. No claim for defective temper will be allowed.

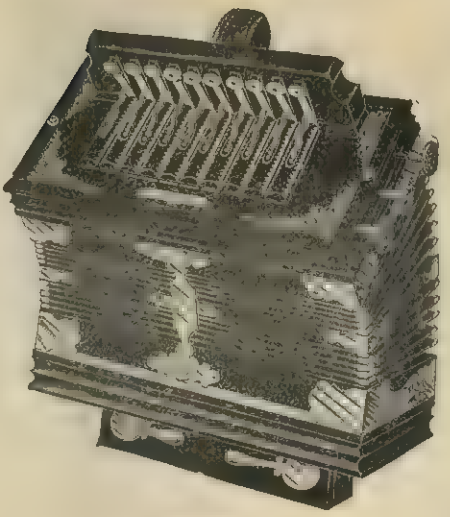
ACCORDIONS.

GERMAN ACCORDION.

Size 10¾x5¼ inches

Arion brand. Ebonized panels and mouldings, open keyboard, nickel keys, bellows protectors, corners and clasps, double bellows

No. 9100 10 keys, 2 stops, 2 sets of reeds ... each $3 70



GERMAN ACCORDION

Size 11" x6 inches.

Pitzschler. Ebonized mouldings, the "Quick Repair" open keyboard, pearl button keys, nickel clasps, corners and bellows protectors, open keyboard, which facilitates replacing springs without taking the instrument apart.

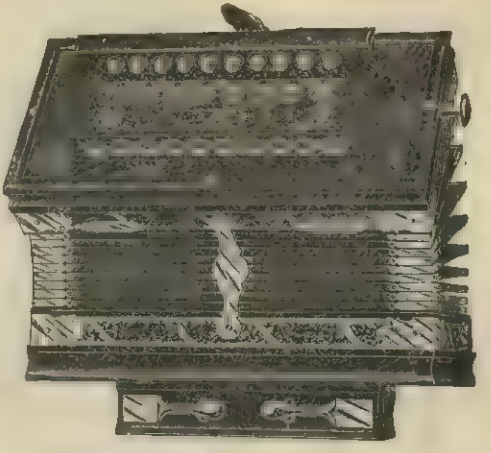
No. 9400 10 keys, 3 stops, 3 sets of reeds ... each $13 00

GERMAN ACCORDION

Size 12"x6 inches

Ebonized mouldings with nickel protected corners, open keyboard nickel keys, triple bellows with nickel bellows protectors, corners and clasps.

No. 91212 10 keys, 2 stops, 2 sets of reeds ... each $10 50

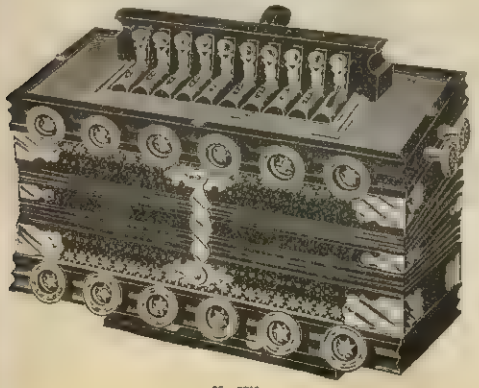


GERMAN ACCORDION

Size 13x6¾ inches.

Gessner. Ebonized mouldings, imitation walnut panels and key cover, nickel sound rings in key cover, patent bellows with metal corners.

No. 982 10 keys, 2 stops, 2 sets of reeds ... each $13 50



No. 9710.

GERMAN ACCORDION

Size 13x6¾ inches.

Moulded frames, open keyboard, 12 fancy trumpets, nickel keys, corners and clasps, double bellows.

No. 9710	10 keys,	2 stops,	2 sets of reeds	...	...	each	$7 85
No. 9710¼	10 "	2 "	2 "	" with bel	...	"	8 25
No. 9710½	10 "	2 "	3 "	" 3 bells.	...	"	8 45

The above prices are subject to the regular discount.

CONCERTINAS.

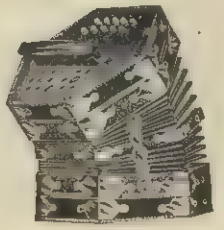
No. 9496.

No. 9808.

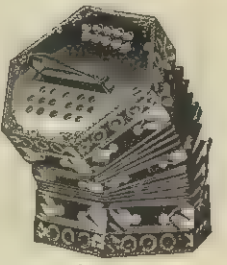
No. 9870.

No. 9878

No. 9194.



No. 9872.



No. 9876

No. 9874

SINGLE SET REEDS.

No.			Each.
9824	20	keys, polished oak tops, with sound rings and nickel ornaments	$ 6 25
9870	20	" nickel tops, corners and clasps, double bellows	7 00
9194	20	" mahogany tops, carved mouldings, leather bellows	12 25

DOUBLE SET REEDS.

No.			Each
9460	20	keys, mahogany tops, with German silver edge and inlaying sound rings, double bellows	$ 7 75
9878	20	" nickel tops and sound rings, nickel corners and clasps, double bellows	8 35
9876	20	" nickel tops, bound with gilt ornamentations and sound rings, nickel corners and clasps, double bellows	8 50
9872	20	" polished tops, bound with gilt ornamentations, nickel corners and clasps, double bellows	8 95
9871	20	" nickel tops, corners and clasps, heavy bellows frames with nickel protectors	8 75
9808	20	" rosewood tops figured moulding, bone keys	11 25

No. 94 English

GENUINE ENGLISH CONCERTINAS.

LACHENAL & CO., LONDON, Makers

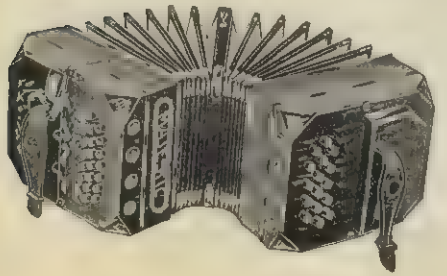
Double action, with screwed notes. Compass 3 3-8 octaves, from G below to second C above.

No.		Each.
91	48 keys, mahogany leather bellows, 4 folds, in wood case	$45 00
94	48 " rosewood morocco bellows, 5 folds, bushed keyholes, inline rosewood case	93 00
910	Anglo-German pattern, 20 keys mahogany, leather bellows, 5 folds, in wood case	28 75
911	Anglo-German pattern, 20 keys, mahogany, steel reeds, leather bellows, 6 folds, in wood case	29 00

No. 910 Anglo-German.

GERMAN CONCERTINAS.

SQUARE FORM. MAJESTIC BRAND.



The Majestic Brand Concertinas, presented herewith, comprise the highest standard of Concertina makers' art. Every detail in the construction has been most carefully worked out, and no trouble or expense has been spared to give the greatest possible value.

The Finish represents the efforts of the most skilled workmen, and is such as is found only on the highest grade goods.

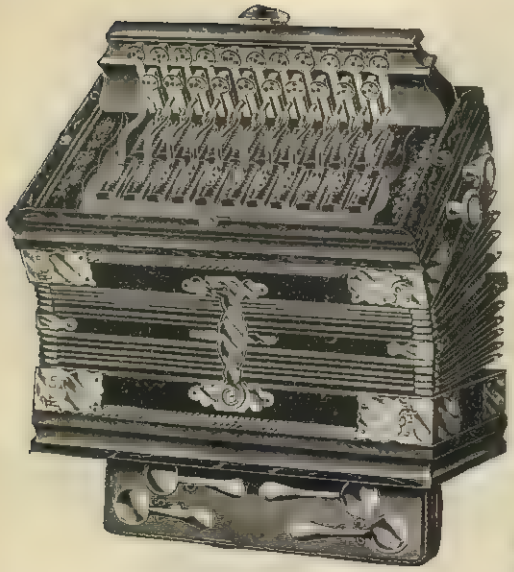
The Reeds are made of the best material, carefully tuned, and form one of the most valued features of the instrument.

The Tone is sweet and powerful, which adds much to the selling qualities of the instrument, and makes it a continued source of pleasure to the owner.

No.		Each
974	Rosewood veneered case, with German silver edges, 3 rows of German silver keys on each side, double bellows, single reeds, 76 notes, 38 keys, composition bronze reeds, size 7 x8½ inches	$37 55
975	Rosewood veneered case, with German silver edges, 3 rows German silver keys on each side, double bellows, single reeds, 76 notes, 38 keys, steel reeds size 7½x11 inches	47 55
976	Rosewood veneered case, with German silver edges and ornamented moulding cut off corners inlaid with German silver ornamentation, double leather covered bellows, with German silver corners and bellows protectors, 3 rows of pearl keys on each side, 76 notes, 38 keys, 152 steel reeds, tuned in octave or double tuning, size 8x7¾ inches	172 56

The above prices are subject to the regular discount.

ACCORDIONS.

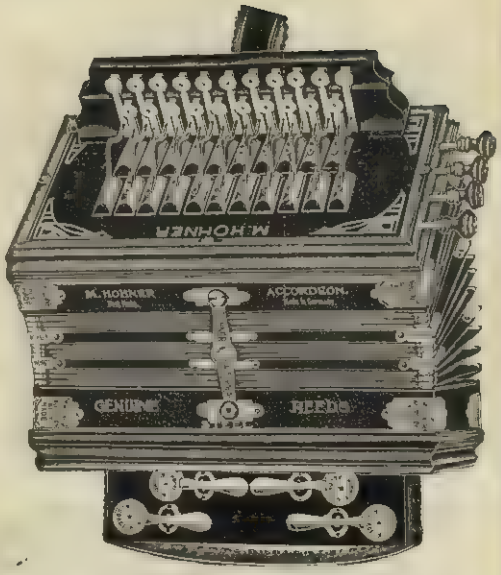


ARION BRAND.

Size 12x7 inches.

Imitation mahogany mouldings, sunken open action keyboard, pearl button keys, nickel bellows protectors, corners and clasps, double bellows.

No. 91019 19 keys, 2 stops, 4 sets of reeds.....each, $17 20
No. 91021 21 " " " " ..... " 18 20

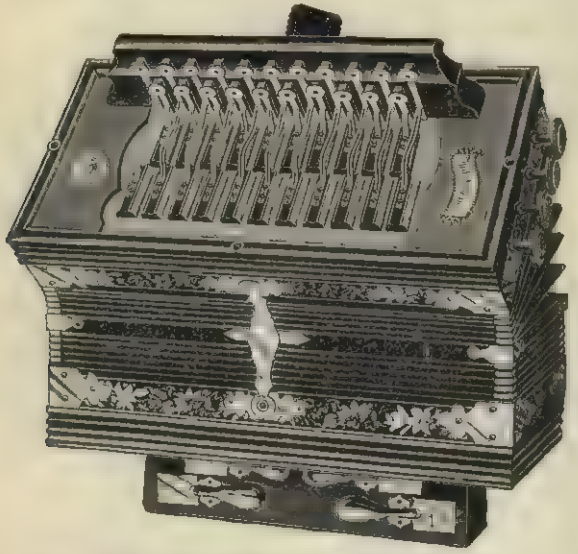


GERMAN ACCORDION. (Hohner's.)

Size 8x13¾ inches.—Genuine steel reeds

Mahogany mouldings, ebonized top, silver pressed, triple bellows, brass bellows protectors and corners, patent self-acting spring nickel clasps, nickel trimmings.

No 9621-H 21 pearl keys, 4 long bass keys, 4 sets of genuine steel reeds, 4 wooden stops.....each, $35 00

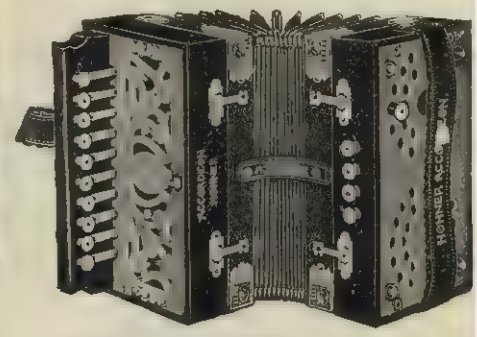


GERMAN ACCORDION. (Pitzschler.)

Fitted with quick repair spiral springs and keyboard, fluted mouldings, imitation mahogany, panel mahogany, sunken open action keyboard, pearl button keys, nickel bellows protectors, nickel corners and clasps, double bellows.

No. 9419 19 keys, 4 stops, 4 sets of reeds, size 14½x7 inches..each, $23 00
No. 9421 Same as No. 9419, with 21 keys, 4 sets of reeds, size 15x7½ inches.....each, 25 00

Orders Filled Same Day Received. No Delay.



VIENNA ACCORDION. (Hohner's.)

Size 9⅜x5½ inches.

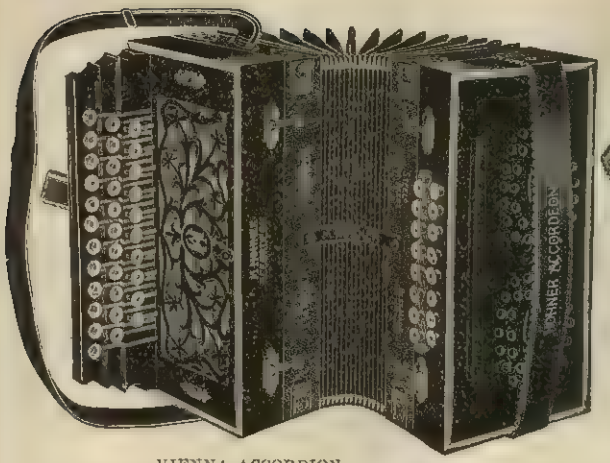
Ebonized frame and keyboard, imitation oak panels, with open scroll work, fine leatherette bellows, brass bellows protectors and corners.

No. 9490 10 pearl button keys, 4 pearl button bass keys, 2 sets of reeds .....each, $13 35

No. 9491 Same as No. 9490, with steel reeds, walnut finished frames and panels.....each, 18 00

The above prices are subject to the regular discount.

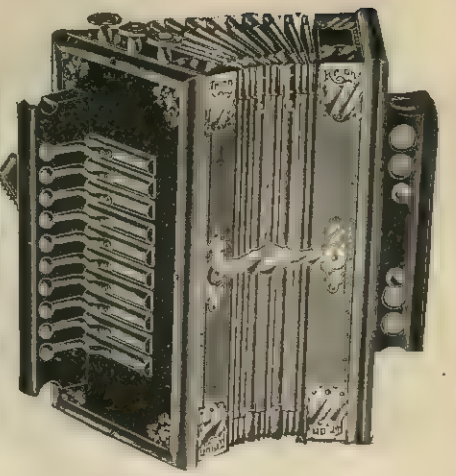
ACCORDIONS.



VIENNA ACCORDION.

No. 9498 Size 6¾x13¼ inches. Ebonized frames and keyboard, imitation bird-eye maple panels with fancy open fret work, the finest leatherette bellows with 16 folds and brass protectors, open keyboard; triple row of keys, fancy colored metal trimmings, leather clasps and shoulder strap. This instrument is offered in a fine wooden case with leatherette covering, hinged lid and carrying strap; 31 pearl keys in 3 rows, 16 pearl bass keys, 6 sets of reeds.....each $70 00

No. 9499 Same as No. 9498, but with genuine steel reeds; 31 pearl keys in 3 rows, 16 pearl bass keys, 6 sets of genuine steel reeds.....each 80 00



ACCORDION. (Arion Brand.)

No. 91036 Size 6¾x12¼ inches. Nickel bound mouldings, ebonized panels, nickel keys and clasps, triple bellows, nickel protected with extra nickel corners; 10 keys, 3 stops, 3 sets of reeds.....each $10 85

VIENNA ACCORDION.

Nos. 9495-9496

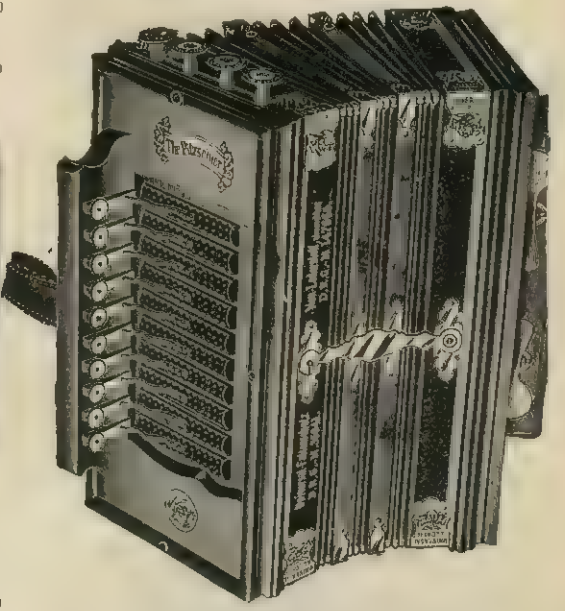
Size 11x5¼ inches.

No. 9493 Fine mahogany finished frames and panels, fancy open scroll work on panels, fine leatherette bellows with brass protectors on bellows and frame, 19 pearl button keys, 8 pearl button bass keys, 4 sets of reeds.....each $26 00

No. 9495 Ebonized frames, keyboard and panel with open scroll work, fine leatherette bellows, brass protectors on frames and bellows, 21 pearl button keys, 12 pearl button bass keys, 4 sets of reeds.....each 33 00

No. 9496 Steel reeds, with walnut finished frames and panels, otherwise same as No. 9495.....each 40 00

NOTE—All Hohner Vienna style accordions can be taken apart without the use of a screw driver or other tools.



GERMAN ACCORDION. (Pitzschler.)

No. 9409 Size 14½x7¼ inches. Mahogany finished mouldings and panels, sunken open-action keyboard, arranged so springs may be replaced without taking the instrument apart, pearl button keys, nickel bellows protectors, corners and clasps, triple bellows; 10 keys, 4 stops, 4 sets of reeds. Each.....$17 00

The above prices are subject to the regular discount.

NEW HAVEN CLOCKS.

LEVER.

Yacht Lever, Solid Oak or Cherry

1 Day Time, each $4 45
8 Day Time, 5 65

Canton, Nickel or Brass

8 Day Time, each $4 45
8 Day Time, 5 65

OFFICE.

Bradford, Solid Oak, Height 17½ Inches, 8 Inch Dial.

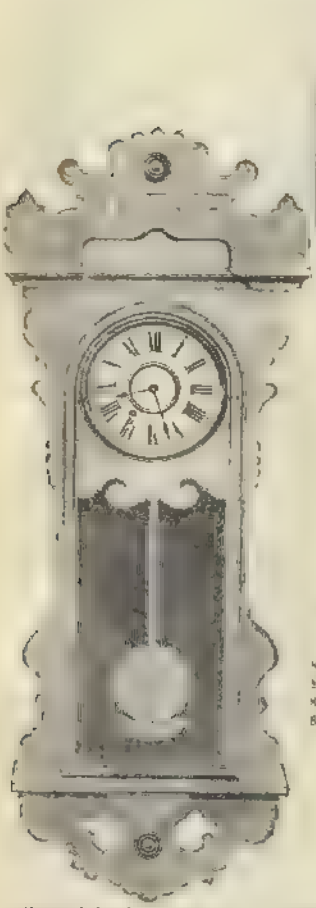
1 Day Time, each $5 75
8 Day Time, 6 75
8 Day Strike, 7 25
8 Day Strike, Calendar, 8 25

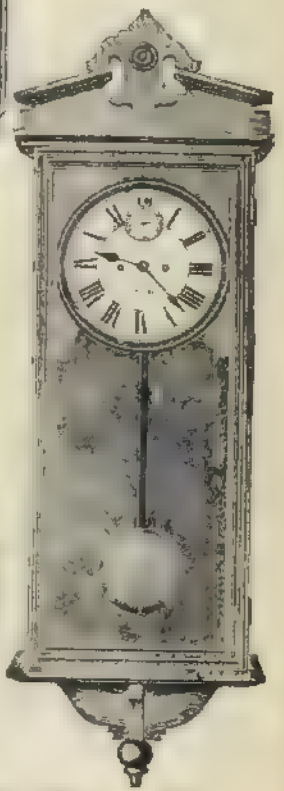
Regulator, Jet or Walnut Veneer, Solid Oak or Walnut Circle, Height 37 Inches, Dial 10 Inches.

8 Day Time, each $ 9 65
8 Day Strike, Coin, 10 55
8 Day Time, Calendar, 11 55
8 Day Going, Calendar, 9 55

NEW HAVEN CLOCKS.

OFFICE REGULATOR





Bank Regulator. Oak Case, Height 33 Inches
Width 16 Inches, Dial 12 Inches
Weight 11 lbs.

8 Day Time,
8 Day Strike,
8 Day Time, Calendar,
8 Day Strike, Calendar,

Maywood, Oak Case, Height 43½ Inches, Width 17 Inches.
Dial 8 Inches, Weight 47 lbs.

8 Day Time, - - - - - - each $ 9.00
8 Day Time, Calendar, - - - - - - " 11.00
8 Day Strike, Gong, - - - - - - " 12.00
8 Day Strike, Gong, Calendar, - - - " 12.50

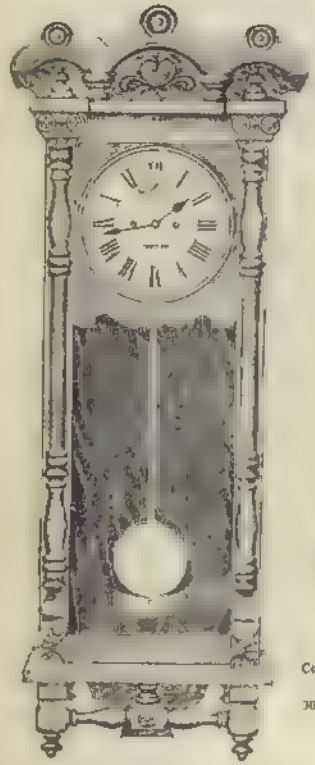
Vanness, Solid Oak Case. Height 45 Inches, Width 15½
Inches. Dial 10 Inches. Weight 40 lbs.

8 Day Time, - - - - - - each $ 10.25
8 Day Strike, Gong, - - - - - - " 12.75
8 Day Time, Calendar, - - - - - - " 1 75
30 Day Time, - - - - - - - " 13.25

ONE IN A CASE. WE CAN'T SHIPPING WEIGHT

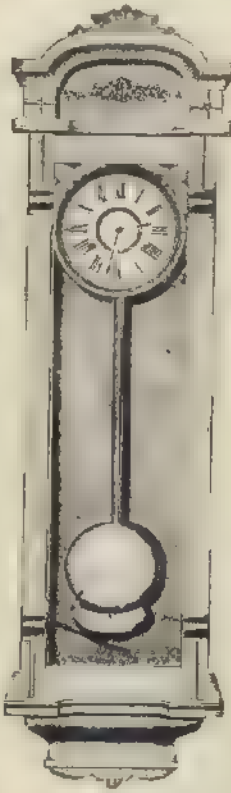
NEW HAVEN CLOCKS

OFFICE REGULATOR

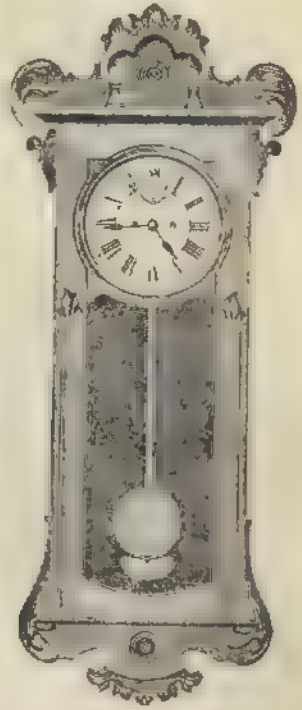


Effrida, Oak Case, Height 49 Inches, Width 19 Inches, Dial 10 Inches, Weight 75 lbs

8 Day Time,	each $17.50
8 Day Strike, Gong,	" 19.00
8 Day Time, Weight Movement,	



Columbia, Solid Oak or Cherry Case, Height 49½ Inches, Dial 8 Inches. 30 Day Time, w[illegible] each [illegible]



Grecina, Solid Oak Case, Height 51 Inches, Width 20 Inches, Dial 10 Inches Weight 75 lbs.

8 Day Time,	each $ 6 75
8 Day Gong,	8.25
30 Day Time,	8.75
8 Day Time, Weight Movement,	10.25

SETH THOMAS GALLERY CLOCKS.

On this and the following pages we illustrate a line of clocks made by the Seth Thomas Clock Co. especially for the railroad trade. They have fine movements and are especially suited for depots and railway offices, halls, and all public places.

18 Inch Dial, Pendulum.

No 1001	[illegible] case.	[illegible]
No 1101	[illegible]	[illegible]
No 1201	15 day, [illegible] case.	[illegible]

24 Inch Dial, Pendulum.

No 1051	[illegible]	each $46.00
No 1151	[illegible]	46.00
No 1251	[illegible]	58.50

SETH THOMAS CLOCKS.

FINE LEVER.

No. 1

No. 1—8 day, time, mahogany or golden oak, 1 steel pinion, polished jewelled movement, chronometer balance, 2 1/2 jewels each, balance 16¼ in. each $44 10

CHATHAM.

No. 2—8 day, pendulum, time, mahogany or golden oak, 12 in. dial, - each $6 82

No. 3—8 day, strike, diameter, 16 in., otherwise same as No. 2, - - - each 8 32

Nos. 2 and 3.

SETH THOMAS CLOCKS.

BANNER LEVER.

Polished Brass Case

No. 601—	1 day, 6 in., time, each	$ 5 25
No. 602	1 day, 6 in., [illegible]	[illegible]
No. 611	1 day [illegible]	[illegible]
No. 612	1 day, 6 in., [illegible]	6 50
No. 621	8 day [illegible]	7 88
No. 631	8 day, 6 in., time	8 88
No. 632	8 day, 8 in., [illegible]	[illegible]

Nickel Plated Case.

No. 701	1 day, 6 in., time, each	$ 5 42
No. 702—	1 day, 6 in., strike	6 24
No. 711—	1 day, 8 in., time	6 24
No. 712—	1 day, 8 in., strike	[illegible]
No. 721—	8 day, 6 in., strike	6 56
No. 731	8 day, 6 in., time	6 88
No. 732	8 day, 8 in., time	[illegible]

ENGINE LEVER.

Polished Brass Case.

No. 781	1 day, time, 5 in., metal dial, each	$5 24
No. 791—	8 day, time, 6 in., metal dial, "	7.66

Nickel Plated Case.

No. 881	1 day, time, 6 in., metal dial, each	$5 42
No. 891	8 day, time, 6 in., metal dial, "	8.06

SETH THOMAS CLOCKS.

Drop Octagon, Rosewood or Walnut Veneer or Old Oak, Polished, 12 Inch Dial, Height 23½ Inches

No. 811 8 day, time and spring, - each $7 18
No. 812—8 day, strike, spring, " " 8 20

Nos. 811 and 812.

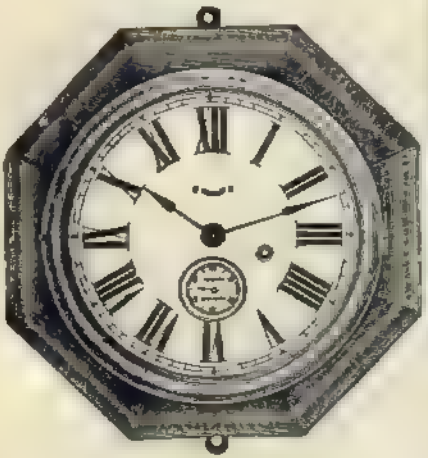
Nos. 821 and 822.

Drop Octagon, Calendar, Rosewood or Walnut Veneer, Polished, 12 Inch Dial, Height 23½ Inches.

No. 821 8 day, [illegible] - each $7 94
No. 822 8 day, [illegible] spring, " 9 46

SETH THOMAS CLOCKS.

LEVER.



Wood Case, Rosewood, Walnut Veneer or Oak, Polished.

No. 501	1 day,	6 in., time,	each $ 4.72
No. 502	1 day,	6 in., time, alarm,	" 5.54
No. 503	1 day,	6 in., strike,	" 5.54
No. 504	1 day,	6 in., strike, alarm,	" 6.36
No. 511	1 day,	8 in., time,	" 5.54
No. 512	1 day,	8 in., time, alarm,	" 6.36
No. 513	1 day,	8 in., strike,	" 6.36
No. 514	1 day,	8 in., strike, alarm,	" 7.38
No. 521	8 day,	8 in., time,	" 7.30
No. 531	8 day,	8 in., time,	" 8.12
No. 532	8 day,	8 in., strike,	" 10 20
No. 541	1 day,	10 in., time,	" 6.80
No. 542	1 day,	10 in., strike,	" 7.62
No. 551	8 day,	10 in., time,	" 9.38
No. 552	8 day	10 in., strike,	" 11.46
No. 561	8 day,	12 in., time,	" 10.96
No. 562	8 day,	12 in., strike,	" 13.04

CHRONOMETER LEVER.

Polished Cast Brass Case, Porcelain Dial, for Locomotives

No. 5003—1 day, time, 3⅛ in. dial, diameter of back 6½ in., snap bevel, each $37 48

No. 5004—1 day, time 4⅜ in. dial, diameter of back 7½ in., snap bevel, each 38 82

No. 5006—1 day, time, 4½ in dial, diameter of back 8½ in., front screwed on, dust proof, winds at side, each 46.12

We call attention to this fine lever clock especially designed for locomotives, steamers, or other situations where accurate time-keeping is required, and a pendulum clock cannot be used.

The movements are made in the best manner, with steel pin nuts and chronometer balance jeweled, and are fitted up with finely tempered hair springs.

They have a very simple and perfect regulator, which provides for the most accurate adjustment.

FINE SOLID STERLING SILVER FIVE O'CLOCK FLORAL DESIGN SOUVENIR SPOONS, HEAVY WEIGHT—GUARANTEED $\frac{925}{1000}$ FINE.

All French gray handles. Illustrations are exact size.

COLUMBINE PATTERN.
No. 5250 Gold lined bowl only. Each $2 10

FORGET-ME-NOT PATTERN.
No. 6261 Plain bowl, ... each, $2 50
No. 6263 Gold lined bowl.. " 2 90

GOLDEN ROD PATTERN.
No. 5258 Gold lined bowl only. Each $2 90

POPPY PATTERN.
No. 6254 Plain bowl, ... each, $2 50
No. 6256 Gold lined bowl.. " 2 90

EASTER LILY PATTERN.
No. 6256 Plain bowl, ... each, $2 50
No. 6257 Gold lined bowl.. " 2 90

ORANGE PATTERN.
No. 6256 Plain bowl ..... each, $2 50
No. 6259 Gold lined bowl.. " 2 90

LILY OF THE VALLEY PATTERN.
No. 6260 Plain bowl ..... each, $2 50
No. 6261 Gold lined bowl.. " 2 90

ROSE PATTERN
No. 6262 Plain bowl, ... each, $3 90
No. 6265 Gold lined bowl .. " 3 85

LILY PATTERN.
No. 6264 Plain bowl, ... each, $3 90
No. 6265 Gold lined bowl .. " 3 85

SUN FLOWER PATTERN.
No. 6266 Plain bowl, ... each, $3 90
No. 6267 Gold lined bowl.. " 3 85

HOLLY PATTERN.
No. 6268 Plain bowl, ... each, $3 90
No. 6269 Gold lined bowl.. " 3 85

COTTON BLOSSOM PATTERN.
No. 6270 Plain bowl, ... each, $3 90
No. 6271 Gold lined bowl.. " 3 85

WHEAT PATTERN.
No. 6272 Plain bowl, ... each, $3 90
No. 6273 Gold lined bowl .. " 3 85

PINE CONE PATTERN.
No. 6274 Plain bowl..... each, $3 90
No. 6275 Gold lined bowl.. " 3 85

The above prices are subject to the regular discount.

Fine Solid Sterling Silver Fruit Pattern Design Souvenir Spoons, Extra Heavy Weight.

Guaranteed—$\frac{925}{1000}$ Fine.

All French gray handles. Illustrations are exact size.

ORANGE PATTERN.
No. 5276 Plain bowl ..each, $4 60
No. 5277 Gold lined bowl .. " 5 00

BLACK BERY PATTERN.
No. 5278 Plain bowl .. each, $4 60
No. 5279 Gold lined bowl.." 5 00

PEAR PATTERN.
No. 5280 Plain bowl .. each, $4 60
No. 5281 Gold lined bowl .." 5 00

BANANA PATTERN
No. 5282 Plain bowl each, $4 60
No 5283 Gold lined bowl, " 5 00

STRAWBERRY PATTERN.
No. 4284 Plain bowl each, $4 60
No. 5285 Gold lined bowl " 5 00

APPLE PATTERN
No. 5286 Plain bowl each, $4 60
No. 5287 Gold lined bowl," 5 00

CANTALOUPE PATTERN.
No. 5288 Plain bowl each, $4 60 No. 5289 Gold lined bowl, each $5 00

ALL ORDERS FILLED SAME DAY RECEIVED NO DELAY.

PINEAPPLE PATTERN.
No. 5200 Plain bowl ... ...each, $4 60
No. 5201 Gold lined bowl " 5 00

CHERRY PATTERN.
No. 5292 Plain bowl.....each, $4 60
No. 5293 Gold lined bowl.. " 5 00

GRAPE PATTERN
No. 5294 Plain bowl.....each, $4 60
No. 5295 Gold lined bowl.. " 5 00

CURRANT PATTERN
No. 5296 Plain bowl.....each, $4 60
No. 5297 Gold lined bowl . " 5 00

The above prices are subject to the regular discount.

Fine Solid Sterling Silver Massive Floral Design Souvenir Spoons,

French Gray Handles.

Extra Heavy Weight—Guaranteed $\frac{925}{1000}$ Fine.

Illustrations Are Exact Size.

DAISY PATTERN.
No. 5298 Plain bowl . . . . . each, $3 80
No. 5299 Gold lined bowl . . . . . " 4 20

MORNING GLORY PATTERN.
No. 5300 Plain bowl . . . . . each, $3 80
No. 5301 Gold lined bowl . . . . . " 4 20

CHRYSANTHEMUM PATTERN.
No. 5302 Plain bowl . . . . . each, $3 80
No. 5303 Gold lined bowl . . . . . " 4 20

CALLA LILY PATTERN.
No. 5304 Plain bowl . . . . . each, $3 80
No. 5305 Gold lined bowl . . . . . " 4 20

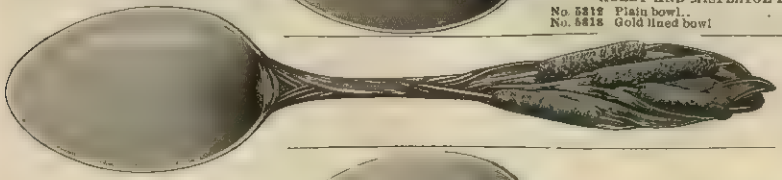
COLUMBINE PATTERN
No. 5306 Plain bow . . . . . each, $3 80
No. 5307 Gold lined bowl . . . . . " 4 20

APPLE PATTERN
No. 5308 Plain bowl . . . . . each $3 80
No. 5309 Gold lined bowl . . . . . " 4 20

LILY OF THE VALLEY PATTERN
No. 5310 Plain bowl . . . . each, $3 80
No. 5311 Gold lined bowl . . " 4 20

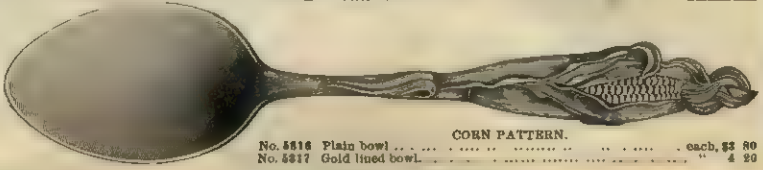
Finest goods on the market, price and quality considered.

HOLLY AND MISTLETOE PATTERN
No. 5312 Plain bowl . . . . each, $3 80
No. 5313 Gold lined bowl . . " 4 20



CAT TAIL PATTERN.
No. 5314 Plain bowl . . . . each, $3 80
No. 5315 Gold lined bowl . . " 4 20

All orders filled same day received. No delay.



CORN PATTERN.
No. 5316 Plain bowl . . . . each, $3 80
No. 5317 Gold lined bowl . . " 4 20

The above prices are subject to the regular discount.

Fine Solid Sterling Silver Souvenir Spoons---Extra Heavy Weight.

All French Gray Handles. **Guaranteed $\frac{925}{1000}$ Fine.** Illustrations are Exact Size.

ROOSEVELT SPOON
No. 5818 State Capitol build'g in bowl ..... each, $4 20
No. 5819 Plain gold lined bowl ..... " 4 20

CHRISTMAS SPOON.
No 5820 Oxidized bowl ..... each, $4 20

STATE SPOON
No. 5821 Any state Gold lined bowl only ... each, $3 60

EASTER OR CHRISTMAS SPOON
No. 5822 Cross and crown in bowl. Oxidized bowl ..... each, $4 20

BIRTHDAY SPOON
No. 5823 Any month, gold lined bowl ..... each, $3 60

CHRIST SPOON.
No 5824 Easter or Christmas souvenir. Ascension in bowl ..... each, $3 60

BIRTHDAY SPOON.
No. 5825 Any month. Gold lined bowl only ..... each, $4 20

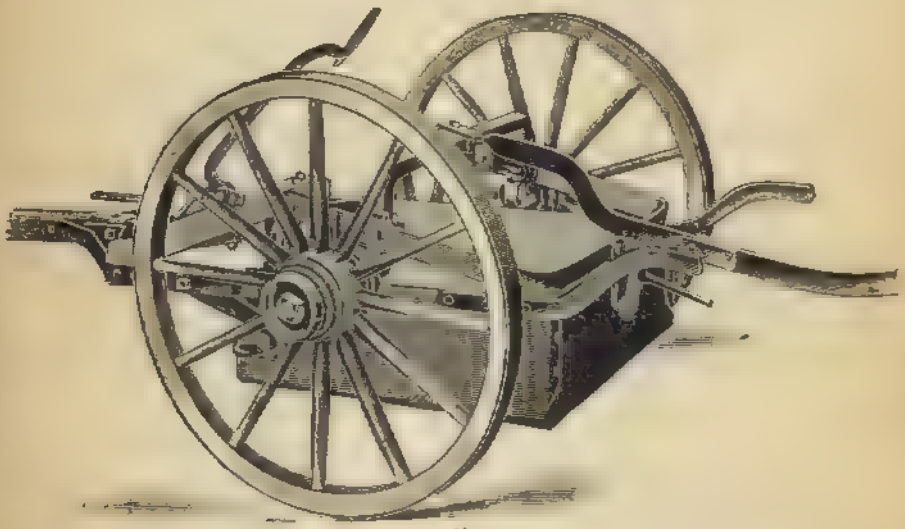
COLLEGE GIRL SPOON.
No. 5826 Gold lined bowl only... each, $5 00

INDIAN SPOON.
No. 5827 Gold lined bowl only ..... each, $5 00

The above prices are subject to the regular discount.

AMERICAN INDIAN SPOON.
No. 5828 Gold lined bowl ..... each, $4 20

THE AMERICAN
WHEELED SCRAPER.



No 3

This Cut represents the Scraper when loaded ready to go to the dump.

DESCRIPTION.

Wheels—Best wood full wheels made of thoroughly seasoned stock 46 inches high with 3½ inch tires. These wheels will outlast the other parts of the scraper. We furnish scrapers with metal wheels when so ordered. See page 23

Axle—Of hammered steel. Are special to give more room for filling.

Tongue—Best quality of oak very strongly ironed, with additional irons to draft bars.

Draft Bars—Special steel. Very strong. Securely braced.

Bowl—Is of the best quality of steel, made especially for the purpose. Size 41 inches long, 44 inches wide, and 16 inches deep. Rises high to clear obstructions when going to the dump.

Bail—Conforms to shape of the top of the bowl, thus increasing its capacity, and avoiding the difficulty experienced with the old style bail when pulling down the lever or Johnson bar.

Hooks—The hooks to prevent the scraper from dumping while filling, are of ample strength, and carefully adjusted to enable the scraper to fill readily, and at the same time prevent the bowl from going too deep.

Sand Excluders on the axles are simple, practical and efficient. No trouble to take the wheel off to properly oil the spindles.

Capacity—16 cubic feet.
Weight—750 pounds.

STEEL RAILROAD PLOW..

A FAVORITE WITH CONTRACTORS.

RAPID GRADING DEPENDS ON GOOD, DEEP PLOWING

No. 1.

The No 1 Plow is a four-horse Plow, but strong enough for six horses. It is the size that we recommend for general grading.

The beam is of the best white oak, strapped on top and bottom.

Handles are strong, thoroughly braced and strapped. They have solid iron hand-holds.

The cutter is reversible.

Clevis is steel.

Share and mouldboard of best Plow steel and double shinned.

Extra share with each Plow.

These Plows are made both right and left hand. We ship right hand unless otherwise ordered.

Cut, 11 inches.

Weight including extra share, 200 pounds.

Weight of extra share, 24 pounds.

STEEL RAILROAD PLOW.

There are no Stronger or Better Plows made than these Railroad Plows.

RAPID GRADING DEPENDS ON GOOD, DEEP PLOWING

No. 2

The No. 2 Plow is an eight horse Plow. It is built like the No. 1, only stronger. It is very heavily ironed and braced, and is particularly recommended for heavy work.

Beam is white oak, 3½ inches by 7 inches by 8 feet.

Handles are strongly braced and have steel iron hand holds.

Standard is steel, 4½ inches by 1 inch.

Cutter is reversible.

Clevis is very strong.

Share and mouldboard, extra heavy and double shinned.

Extra share furnished with each Plow.

These Plows are made both right and left hand. We ship right hand unless otherwise ordered.

Cut, 11 inches.

Weight, including extra share, 275 pounds.

Weight of extra share, 33 pounds.

STEEL RAILROAD PLOW.

There are no Stronger or Better Plows made than these Railroad Plows.

RAPID GRADING DEPENDS ON GOOD, DEEP PLOWING

No. 3

When You Buy a Plow, Get One Strong Enough to do Your Work.

Beam of the best white oak or hickory. Heavy iron strap on both upper and lower side of beam. Mould board and shares of best Plow steel, extra heavy and double shinned. Landside very heavy and long.

Handles of the best white oak or hickory, strapped with iron, well braced and made with solid iron hand holes.

Steel clevis, made extra strong, with two steel rings.

Standard of steel, 6 inches by 1 inch.

Cutter, made of best quality of steel and reversible.

The handles are protected when plow is dragging by a steel guard bolted to side of beam.

Capacity, 10 to 12 horse

Cuts 12 inches

Weight, including extra share, 325 pounds

Weight of share, 43½ pounds.

Extra share is furnished with each Plow

We ship right-hand Plows unless otherwise ordered

WOOD TACKLE BLOCKS.

PLAIN IRON BUSHED.

Single. Double. Triple. Sheave.

Iron Strapped, Steel Pin.

Size (length of block),	3	3½	4	5	6	7	8	9	10	12 in.
Diameter of sheave	1¾	2	2⅜	3	3½	4⅛	4⅝	5⅛	6⅛	8 in.
Width of mortise	⅝	⅞	1	1	1	1¼	1⅜	1⅝	1	1 in.
For rope	¼	⅜	⅝	½	⅝	¾	1	1	1⅛	1½
Weight single	¾	1	1¼	1½	1¾	2	3	3	4	21 lbs.
Single,	each $1 70	75	85	90	1 00	30	65	85	2 75	4 45
Weight of double,	¾	2	2½	4	7	9½	4	6	26	34 lbs.
Double,	each $1 70	45	60	1 75	2 00	2.40	2.85	3 40	4 50	7 50
Weight of triple,			4	6	9		19		26	47 lbs.
Triple,			each $2 15	2 75	3 50		4 25		6 25	11 65

SIX ROLLER BUSHED.

Single. Double. Triple. Sheave.

Iron Strapped, Steel Pin.

Size (length of block),	4	5	6	7	8	9	10	12 in.
Diameter of sheave,	2⅛	3	3½	4⅛	4¾	5½	6⅛	8 in.
Width of mortise,	⅝	⅞	1⅛	1⅜	1	1⅝	1⅞	1½ in.
For rope,	¼	⅜	½	⅝	1	1	1⅛	1¼ in.
Weight of single,	½	2	4½	6	9½	11	15	24 lbs.
Single,	each $1 20	1 25	1 50	70	2 25	2 50	3.50	5.30
Weight of double,	2½	4½	7	C	15	16	3	37 lbs.
Double,	each $2 25	2 35	2 85	3 35	4 15	4.70	6 30	9 20
Weight of triple,	3		9½		20½		40	53 lbs.
Triple,	each $3.25		4 40		6 00		8 50	13 20

HOIST TACKLE BLOCKS.

Malleable Iron, Steel Pins, Two Sheaves to Upper and Two Sheaves to Lower Block

Nos.	16	14	13
For rope	⅜	½ & ⅝	⅝ & ¾ in.
Sheaves	5"	8"	9"
Capacity	1,000	1,500	2,000 lbs.
Weight per set,	6	6½	8 lbs.
Each	$2.20	4.00	5.00
Nos.	12	11	
For rope	⅝ & ¾	¾ & ⅞ in.	
Sheaves	8"	9"	
Capacity	2,500	3,000 lbs.	
Weight per set,	15	20 lbs.	
Each,	$6.65	9.00	

This hoist is strong, powerful and quick in operation. The gearing is of steel and protected from dirt. The pawl is operated by a lever and is easily thrown out of gear when desired. The hoist is provided with a ratchet wheel and pawl, which prevents the load from running down when the lever is released. The frame is of malleable iron, and the gearing is of steel, running in oil. The sheaves are of wood and iron wheels and steel gearing.

ALL HOISTS SHIPPED WITHOUT ROPE

EXTRA SHEAVES FOR WOOD TACKLE BLOCKS.

Plain Iron, Finished.

For block,	4	5	6	7	in.
Size of sheave	2¾ × ⅝	3⅛ × ¾	3½ × 1	4⅜ ×	
Weight	½	½	½	½	lbs
Each	$0.20	20	25	35	
For block,	8	9	10	12	in.
Size of sheave	4⅜ × ⅝	5½ × 1⅛	6 ¼ × 1¼	6 ×	
Weight	2	2 ½	3 ¼	5½	lbs
Each	$0.35	45	55	90	

To order these sheaves please order as follows. Give only extra sheave for 7 in. block, etc.

STEEL TACKLE BLOCKS.

Single.

Double.

Triple.

Steel Straps, Pins and Rivets, Gray Iron Sheaves and Shells.

Size (length of block),	4	6	8	10	12 in.
Sheave,	2½×⅝	3½×1	3×1½	6½×1½	7½×1½ in.
For rope,	⅜	½	¾	1¼	1½ in.
Weight of single,	1¼	4	10	17	27 lbs.
Single,	each $0.90	1.25	1.85	3.10	5.00
Weight of double,	2½	8	14	25	36 lbs.
Double,	each $1.75	2.25	3.20	5.10	8.25
Weight of triple,		8	20	32	52 lbs.
Triple,		each $3.25	4.75	7.00	11.75

The steel straps of these blocks are made of the best wrought iron, and are accurately turned and fitted together. The shells are extra heavy and provide secure fastening for pins.

SNATCH BLOCKS.

WOOD.

STEEL.

Iron Strapped and Bushed, Steel Pin.

No. 213—Inches.	6	8	10	12
For rope	⅛	¼	⅜	½ in.
Sheave	3½x1⅛	4½x1⅛	5¾x1⅝	6½x2 in.
Weight	6	14	16	28 lbs.
Each	$4.00	5.75	8.50	0.00

Automatic, Steel Strap, Loop and Rivet, Gray Iron Sheave and Shell.

No. 215 Inches.	7	8	10	12
For rope	¼	⅜	½	⅝ in.
Sheave	3½x1⅛	4x1⅛	5x1⅝	6½x2 in.
Weight	8	14	23	35 lbs.
Each	$5.00	6.50	0.00	12.50

BURR STEEL SAFETY LIFTS.

WITHOUT ROPE.

Nos. 2 to 6.

With Three Sheaves to Upper and Two Sheaves to Lower Block

Nos.	2	3	4	5	6
For rope	¼	⅜	½	⅝	¾ in.
One man can hoist	250	300	350	400	450 lbs.
Capacity	500	600	900	2000	2500 lbs.
Weight	1¾	4	8	12	16 lbs.
Each	$2.00	3.00	5.50	7.00	8.50

With Five Sheaves to Upper and Three Sheaves to Lower Block.

Nos.	4½	5½	6½
For rope	½	⅝	¾ in.
One man can hoist	600	700	850 lbs.
Capacity	3000	3500	5000 lbs.
Weight	7	9	20 lbs.
Each	$10.00	12.00	14.00

... the hook with the eye, close to the casting, so as to hold it down, the ... properties and ... the ... the ... the ... the ... the ... the hook to ... the rope. Will lock securely on old or greasy rope. ... wears the rope. Never hard to unlock. The heavier the load the more secure the hold. Never fails to lock ...

WIRE ROPE.

Catalogue and Prices on Application.

In ordering wire ropes be sure to specify if dimensions given are diameter or circumference.

Be very particular to state style of rope wanted, also the grade or material, either iron or steel. If undecided, we will best answer your purpose if you inform us the use to which the rope is to be put, and we will supply the style and quality best adapted to the needs stated.

If for elevators, state whether hoisting rope or hand rope is wanted, and if the former, specify whether iron or steel.

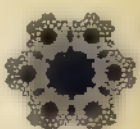
If rope is required to run over sheaves or pulleys, state how many, and the size of each.

Specify exact length of endless transmission ropes, or the distance from center to center, with circumference of wheels.

No. 1.

No. 2.

No. 3.



No. 4.

The core or center for all these styles of ropes is tarred Manila hemp of a diameter suited to the diameter of the finished rope. Varying degrees of strength and flexibility are secured by the number and character of the wires of which the rope is made.

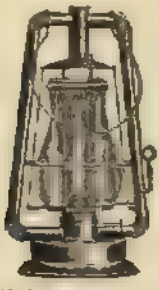
Figure 1. Represents ropes made of six strands, each of seven wires. Such ropes are used principally for transmission of power, standing ropes, guy ropes, ships' rigging, etc.

Figure 2. Shows ropes of six strands. Each strand however consists of twelve wires laid around a tarred hemp center. These six strands are again laid around a hemp core, securing great flexibility. Ropes of this character are principally used for slow running rigging and hawsers.

Figure 3. Shows ropes of six strands, each strand composed of nineteen wires. The greater number of wires greatly increases the flexibility of the rope. Such ropes are very generally used as hoisting ropes for general mining and contracting purposes requiring great strength, durability and flexibility.

Figure 4. Shows what is known as Tiller construction. This is the most flexible form of wire rope because each of the six strands is itself a complete rope of six strands of seven wires, or forty-two wires around a hemp center. Thus there are 252 wires in all. Tiller rope will have six lateral and one central tarred hemp core. Such ropes are used as hand ropes on elevators, steering ropes on steamboats, etc.

LANTERNS.



No. 242—Tubular, side lift No. 0 globe ¾ in. burner, ¾ in. wick, w't per doz. 40 lbs., - - per dozen $9.50
HALF OR ONE DOZEN IN A CASE.

No. 243—Tubular, side lift, large fount, No. 0 globe, 1 in. burner, 1 in. wick, w't per doz. 40 lbs., - per dozen $13.00
HALF DOZEN IN A CASE

No. 363—Tubular side lift guarded, glass fount No. 0 globe ¾ in. burner, ¾ in. wick, w't per doz. 47 lbs., per dozen $ 3.00
No. 363O Glass Founts for No. 363 lanterns, w't per doz. 7 lbs. - - - per dozen .90
LANTERNS, HALF DOZEN IN A CASE. FOUNTS, FOUR DOZEN IN A BOX.

CAR INSPECTORS' LANTERNS.

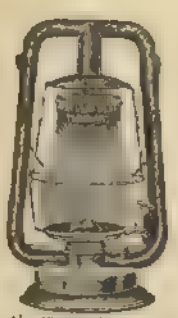
No. 2150—Tubular bright tin hood 8½ in. high 6 in. deep 5 in. silvered glass reflector, ¾ in. burner, ⅝ in. wick, No. 0 globe, top lift, w't per dozen 42 lbs. per dozen $26.00
HALF DOZEN IN A CASE

SEARCHLIGHTS.

No. 35.

No. 35 Tubular tinned tin, 1 in. burner ¾ in. wick, No. 0 globe, 12 in. [illegible] reflector, w't per doz. 95 lbs. per dozen $[illegible].50
No. 40 Tubular tinned tin [illegible] No. 2 globe, 20 in. reflector w't per doz. 200 lbs. per dozen [illegible].00
NO. 35, ONE-QUARTER DOZEN. NO. 40, ONE IN A CASE

LANTERNS.



No. 242—Tubular table oil [illegible] C globe, 5¼ in. burner, ½ in. wick, [illegible] per dozen 39 50
[illegible] IN A CASE

No. 241—[illegible] large [illegible] No. 0 globe, 7 in. burner, [illegible] wick, [illegible] per dozen $13 00
[illegible] IN A CASE

No. 2—Tubular oil [illegible] same, No. 2 globe, [illegible] burner, [illegible] per doz. 72 lbs. per [illegible] 5 50

CAR INSPECTORS

No. 2150—Tubular, car inspectors, straight tin, japanned, 6 in. deep, 5 in. silvered glass reflector high cone burner, ⅝ in. wick, No. 0 globe, top lift, w't per doz. 49 lbs., per dozen, 24.00

No. 35

No. 35—Tubular, blued tin, 1 in. burner, ⅞ in. wick, No. 0 globe, 14×7 in. tin reflector w't per doz. 95 lbs., per dozen $30.00

No. 40—Tubular, blued tin, 1⅝ in. wick, 1½ in. burner, No. 2 globe, 20× 6 in. tin reflector w't per doz. 300 lbs., per dozen 72.00

NO. 35, ONE-QUARTER DOZEN; NO. 40, ONE IN A CASE

STATION LAMPS.

Nos. 11, 21 and 31

Nos. 22 and 34

Nos. 12, 23 and 33

Square

No. 11— 8x10 in. height 15½ in., ⅝ in. burner, ¾ in. wick, 7 in. silvered reflector, weight 5 lbs. each $
No. 21—10x12 in. height 17½ in., 1 in. burner, 1 in. wick, 8 in. silvered reflector, weight [illegible] lbs.
No. 31—11x15½ in., height 21 in., 1 in. burner, 1 in. wick, 10 in. silvered reflector, weight [illegible] lbs.

Triangular

No. 22—10x11 in., height 8½ in., 1 in. burner, 1 in. wick, 8 in. silvered reflector, weight 9 lbs. each $
No. 34—12x14 in., height 18½ in., 1 in. burner, 1 in. wick, 10 in. silvered reflector, weight 22 lbs.

Square Tubular.

No. 12— 8x9 in. height 9 in., No. 2 burner, 1 in. wick, 6 in. silvered reflector, weight 16 lbs. each $
No. 23— 9x10 in., height 2 ⅝ in., No. 3 burner, 1⅜ in. wick, 8 in. silvered reflector, weight 24 lbs.
No. 33— [illegible] height 26 in., No. 3 burner, 1 in. wick, 12 in. silvered reflector, weight 38 lbs.

All the above are made of tinplated iron

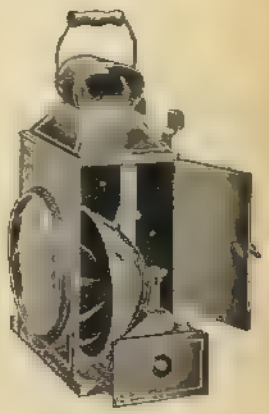
ONE IN A CASE

MOTOR HEADLIGHTS.

Triangular Tubular.

No. 4—Base, height 22 in., No. 3 burner, ½ in. wick, 10 in. silvered reflector, weight [illegible] lbs. each $8.50

ONE IN A CASE



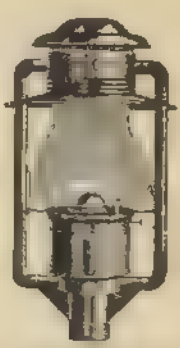
No. 634 Extreme height 22 in., [illegible] in. silvered copper reflector, dash card attachment, cable for motor car, wt. 30 lbs. each $12.00

ONE IN A CASE

Weight given above is the shipping weight

GLOBE TUBULAR LAMPS.

No. 97
For Nos. 30 and 3 lamps



No. 30 nickeled green, hooping with bottom 3/4 tin lined. No. 3 burner 1 1/4 in. wick. No. 3 g... each $6.00
No. 30G With glass lined, otherwise same as No. 30, weight 29 lb. ...
No. 3 P... green ... with ... burner ... in. wick. No. 3 globe ... gilt 27 in. ... weight 3 lbs. ... 1.00
No. 3G ... green lined, otherwise same as No. 3, weight 12 lb. ... 0.75
No. 97 E... with ... green ... gilt ... weight ... lb. ... 0.50
No. 98 ... with burner ... green with ... for No. 97 ... weight ... lbs. each 2.50
No. 10 1/2— E... Tin F... with burner ... fit Nos. 3 and 30 Banger lamps, painted green reservoir with lime ... regulator ... weight ... lbs. ea. .10

No. 55 ... Rochester ... burning ... painted green with No. 2 Rochester burner and No. 3 tubular globe, height ... to top 25 1/2 in., weight ... lbs. each $ 3.00
No. 65— ... green, with No. 2 Rochester chimney, No. 3 tubular globe, height 31 in. weight 44 lbs., " 10.00

Four ... with ... against ... on legs, as Rotating light give three times the light of flat wick lamps
ONE IN A CASE

STREET LAMPS.

No. 74.

No. 2.

No. 32.

For Post or Bracket.

No. 74—Corrugated corrugated top, painted green, height about 32 in., socket glass fount No. 2 Sun burner and chimney, wick, weight 28 lbs. . . . . each $3 00

No. 2 Square, burner roughened wick, painted green, height 36 in., large fount, can be set to burn a certain number of hours and has No. 3 burner with wick, chimney, weight 35 lbs. . . . . each 9 00

No. 32 Square, glass side, painted green, removable white porcelain dome, heavy spun top, socket, malleable iron corner rods, height 40 in., weight 25 lbs. . . . . each 7 50

ONE IN A CRATE.

STREET LAMP POSTS.

No. 7—Turned cedar, for all styles of post lamps, length 10 ft., turned 7 ft., weight 50 lbs., ... each $1 50

HAND LAMPS.

No. 640.

No. 790.

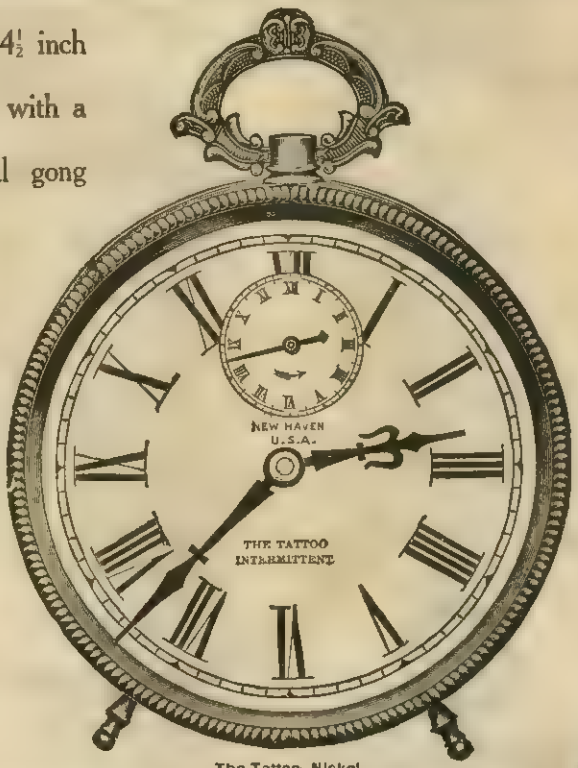
No. 640. Polished brass, height 2 in., No. 0 Sun burner, ¼ in. wick, weight per dozen 2 lbs., ... per dozen $2 50

No. 790—Bright tin, height 3½ in., No. 0 Sun burner, ¼ in. wick, weight per dozen 3 lbs., ... 1 25

Not Only The Best American Alarm Clock, But The Standard Alarm Clock of The World.

This clock has a 4½ inch case and is fitted with a 4 inch bell-metal gong on the back.

It rings like a fire alarm every few seconds for fifteen minutes.



The Tattoo Nickel.
No. 6310 One day time, alarm..... each $3 00
The original intermittent alarm clock.

No one can over sleep with a 4 in. gong sounding intermittently for a quarter of an hour.

The alarm can be stopped at will by means of our patent switch.

Wasp Long Alarm—Nickel.
2 inch dial, beveled glass, alarm runs 1½ minutes, can be stoped at pleasure, height 3¾ inches.
No. 6313 One day time, alarm..ea. $2 70

FINE NICKEL ALARM CLOCKS.

Sunrise Nickel.
4 inch dial, height 6¼ inches.
No. 6311 One day time, alarm .....each $2 85

The Auto Alarm.
Four inch seamless case with[illegible] front, alarm is runs on a 3 [illegible] and can be stopped by turning shut off switch
No. 6312 One day time, alarm.. each $2 70

Wasp Time—Nickel.
2 inch dial beveled glass, height 3 in.
No. 6314 One day time....each $2 00

The above prices are subject to the regular discount.

The Parker Clock Co.'s Rotary Hammer Nickel Alarm Clocks

No. 107 PARKER SHUT-OFF ALARM CLOCK

Our Prices are Right
Quality Considered

The Best Goods
on the Market

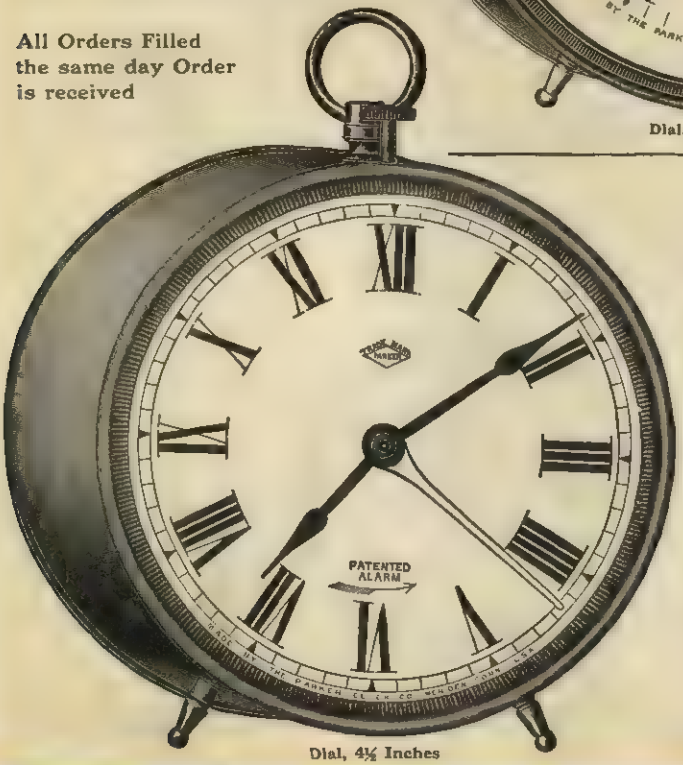
The lowest priced Shut-off Alarm Clock on the market. The movement is identical with all the high-grade Parker Alarm Clocks. None of the salient features missing. It is a long alarm, and like all other Parker Alarm Clocks, the movement can be removed from the case within a few seconds and repaired in less than one-quarter of the time required for repairing other makes.

No. 6815 Price, each . . .$2.15

Dial, 4½ Inches

Dust-Proof Rotary Hammer

All Orders Filled
the same day Order
is received



Dial, 4½ Inches

No. 108 PARKER INTERMITTENT ALARM CLOCK

SIMPLICITY
ACCURACY
EFFICIENCY
DURABILITY

A RARE COMBINATION

Combines all of the above virtues and embraces the salient features of construction which have recommended the **PARKER** Alarm Clocks to all repairers throughout the civilized world

Dust-Proof Rotary Hammer

Most simple and direct "shut-off," which can be operated in the dark. Simply press the button and stop the alarm instantly. No vexatious adjustment of bell or hammer; no part of movement exposed to dirt, dust or moisture; requires but a few seconds to remove movement from case, and **the only Alarm Clock made warranting repairs.**

No. 6816 Price, each.....$2.85

The above prices are subject to the regular discount.

The Parker Clock Co.'s Rotary Hammer Nickel Alarm Clocks.

Rotary Hammer Alarm.

No. TRADE MARK PARKER. 101

ONE DAY TIME ALARM. HEAVY BRASS NICKEL PLATED CASE, DUST PROOF.

Cut half size.

Dial 4½ inches, height 5½ inches. Has the following special features: Quick beat watch escapement, with steel pallet faces highly polished. Mainsprings can be removed or replaced without disturbing trains. Has cut steel pinions throughout. The centrally mounted alarm pointer is easily set to any position. Movement can be easily drawn from case by pressing buttons at side.

No. 6317 Price each $3 30

Rotary Hammer Alarm.

No. TRADE MARK PARKER. 61

ONE DAY TIME ALARM. HEAVY BRASS NICKEL PLATED CASE, With Alarm Shut-Off Latch.

Cut half size.

Dial 3 inches, height 6 inches. Movement is without doubt perfect, because it has quick beat watch escapement with mirror polished steel pallet faces. Cut steel pinions throughout. Mainsprings can be removed without disturbing train or escapement. Will run and keep time over 48 hours. The alarm movement is separate from the time movement, and will ring loud and long. Is equipped with alarm shut-off latch, making it the most serviceable and least liable to get out of order of any clock on the market.

No. 6318 Price each..... $3 20

Rotary Hammer Alarm.

No. TRADE MARK PARKER. 63

HEAVY BRASS NICKEL PLATED CASE, DUST PROOF.

Cut half size.

Dial 3 inches, height 6¼ inches. This clock is similar to our No. 61, but with alarm on back of clock instead of under the base. Somewhat cheaper in price, but of same good quality.

No. 6319 Price each $2 95

No. TRADE MARK PARKER. 43

One Day Time.

HEAVY BRASS NICKEL PLATED CASE, DUST PROOF.

Dial 3 inches, height 5¼ inches. No. 43. Common one-day time, same design as No. 63, but without alarm. A good timekeeper. Movement can be easily drawn from case by pressing buttons at side.

No. 6320 Price each..... $2 40

Orders Filled Same Day Received

NO DELAY

CUT FULL SIZE

THE AMERICA ALARM

Improved 4-inch 30-Hour Alarm

NICKEL PLATED CASE
NICKEL PLATED BACK

ALL POINTS OF FRICTION HARD STEEL. Brass wheels. Regularity of movement not obtainable by other methods of construction. Cut full size. Fine hard steel pivots, hard steel pinion leaves, springs encased in barrels, noise of winding reduced to a minimum. THE CHEAPEST AND MOST RELIABLE ALARM CLOCK.

CONSTRUCTION PATENTED

No. 6321 Price each..... **$1 45.**

No. 6322 In case lots of 50 Clocks.... ....each $1 42

The above prices are subject to the regular discount.

The Parker Clock Co.'s Rotary Hammer Nickel Alarm Clocks.

Rotary Hammer Alarm.

No. TRADE MARK PARKER 106.

Heavy Nickel-Plated Case, Dust Proof.

Cut half size.

Dial, 4 inches. Height 4½ inches.

Heavy nickel-plated, dust proof case.

This is the best low-priced but high-grade alarm clock made.

The movement has all the good features of the higher priced Parker clocks, including dust-proof case, cut steel pinions, springs outside the plates, mirror polished pallets, etc.

The alarm will ring 3 minutes, which is from 6 to 12 times longer and stronger than any other low-priced alarm clock.

No. 6323 Price . each, $1 92

Rotary Hammer Alarm.

No. TRADE MARK PARKER 61.

One day Time Alarm.
Heavy Brass, Nickel-Plated Case, with Alarm Shut-Off Latch.

Cut half size.

Dial 3 inches. Height 6 inches.

Movement is without doubt perfect, because it has quick-beat watch escapement, with mirror polished steel pallet faces. Cut steel pinions throughout.

Mainsprings can be removed without disturbing train or escapement. Will run and keep time over 48 hours.

The alarm movement is separate from the time movement and will ring loud and long. Is equipped with alarm shut-off latch, making it the most serviceable and least liable to get out of order of any clock on the market.

No. 6326 Price . . . . . each, $2 20

Rotary Hammer Alarm.

No. TRADE MARK PARKER 105.

Heavy Brass Nickel-Plated Case, Dust Proof.

Cut half size.

Dial 4⅛ inches. Height 5½ inches.

This clock we term our "Special," for the reason that we made a "special" effort to get out a clock to meet the popular demand of the retail trade for a "Parker" to sell for $1.00. The No. 105 is the result of this effort which has been so thoroughly appreciated by the trade that it is very necessary that orders for this style of clock be placed in advance.

Features no others have:

3 plate movements—quick-beat escapement, mirror polished pallets, cut steel pinions, rotary hammer alarm. Alarm never rattles.

Dust-proof case.

No. 6324 Price . . . . . each, $2 00

Rotary Hammer Alarm.

No. TRADE MARK PARKER 103.

One-Day Time Alarm.
Heavy Brass Nickel-Plated Case.

Cut half size.

Dial 3¼ inches. Height 5 inches.

One-day time alarm.

The construction is entirely new. It has front set, no glass or sash; indestructible, gilt or silver plated metal dial.

Heavy brass nickel-plated dust-proof case.

The movement embraces all the new and best features found only in the construction of the Parker clocks.

No. 6327 Price . . . . . each, $2 15

Double Bell Rotary Alarm.

No. TRADE MARK PARKER 98.

Heavy Brass Nickel Plated Case, Dust Proof, Recessed Back.

Cut one-third size.

Dial 6 inches. Height 6½ inches.

Alarm will run continuously 3½ minutes and is equipped with alarm shut-off latch. The movement has three plates, quick-beat watch escapement.

Mainsprings can be removed or replaced without disturbing escapement or any part of the trains.

Has cut steel pinions throughout.

Heavy brass, nickel-plated, dust-proof case from which movement can be drawn by simply pressing push-buttons at side of case. A very desirable clock for the kitchen.

This clock has deep recessed back, and double bells between which the hammer revolves, striking each alternately with electric effect for 3½ minutes. Keys and hand sets stand out and can easily be taken hold of. No sore fingers from setting hands on our clocks.

Imprints on back of case, giving names of arbors, and arrows indicating direction same should be turned.

No. 6325 Price. . . . . each, $4 20

Rotary Hammer Alarm.

No. TRADE MARK PARKER 104.

One-Day Time Alarm.
Heavy Gold-Plated Case, Decorated Porcelain Dials, Elegant Assorted Designs.

Cut half size.

Dial 2¾ inches. Height 3⅝ inches.

This clock has a very fine movement with reliable time-keeping qualities.

Case is of French design, heavily gold-plated and lacquered. Dials decorated enamel, assorted colors and designs. Alarm easily set from front of dial. A nice ornament for a lady's boudoir.

No. 6328 Price . . . . . each, $4 80

The above prices are subject to the regular discount.

The "Darche" Electric Alarm Clock

WILL ALARM UNTIL STOPPED BY SLEEPER.

"GET-UP" ELECTRIC ALARM CLOCK

(Out ¼ size.)

THE EARLY RISER'S FRIEND

No Switch, No Wires to Clock, 2 Alarms, Very Noisy, No Oversleeping, Will Ring Until Stopped.

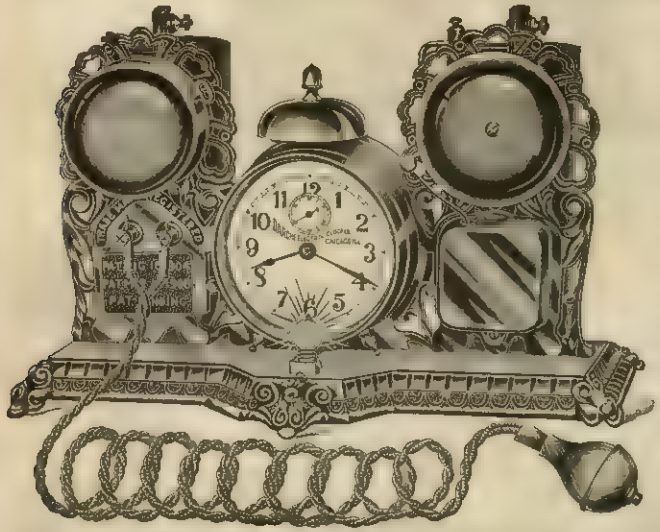
Operated with dry battery; requires no care. Made in the latest style dull black metal, nickel trimmed. Each clock put up in separate box. A clock for up-to-date and up-to-time people.

THE ONLY PERFECT ALARM ON THE MARKET.

A Trade Winner. Very Simple. Operated with our Perfection Dry Battery. Height 8 inches; length 12½ inches; width 5½ inches; weight 6½ pounds.

No. 6329 PRICE.....EACH, $7.60

The "Darche" Flash-Light Electric Alarm Clock.



Flash-Light Electric Alarm Clock with Stamped Steel Bank attached, and well-made lock with key for same. By touching the metal part of pear push to any part of clock or frame will make a fine call bell. No danger of any shock. Everything complete and ready to use. Operated with two dry batteries. A long push cord is attached to clock, and can be used in bed to see the time at night by pressing pear push at end of cord. The lamp is guaranteed to give best satisfaction, and the only clock of its kind made.

This clock has all the features of the "Get-Up" Electric Alarm Clock and alarm will ring until you "Get-up" to stop it. Furnished in fine nickel plate or copper oxidized finish. Height 8 in.; length 12½ in.; width 7 in.; weight 9½ pounds.

No. 6330 PRICE.....EACH, $10.70

The above prices are subject to the regular discount.

Fine Clock and Mantel Ornaments—Bronze Figures.

PRICES EACH.

SCOUT.

No. 6331 Bronze..... $2 15
No. 6332 Gilt 2 40
Height 9½ inches, width 8 inches.

DIANA.

No. 6333 Bronze. $0 70
No. 6334 Gilt.... .. 95
Height 6½ inches, width 5½ inches.

STAG

No. 6336 Bronze..... $1 90
No. 6336 Gilt 2 15
Height 9 inches, width 5¾ inches.

BONNER.

No. 6337 Bronze $1 70
Height 7½ inches, width 8½ inches.

DOG.

No. 6338 Bronze. $1 55
No. 6339 Gilt..... 1 80
Height 6 inches, width 8 inches.

SITTING STAG.

No. 6340 Bronze..... $1 10
Height 4½ inches, width 6 inches.

TWO HORSES.

No. 6341 Bronze..... $2 30
Height 5 inches, width 6½ inches.

HORSE.

No. 6342 Bronze..... $1 80
Height 5¾ inches, width 6¼ inches.

PACER.

No. 6343 Bronze..... $3 35
Height 6¼ inches, width 8½ inches.

The above prices are subject to the regular discount.

COMBINATION SHEARS AND PUNCHES.

No. 11. [illegible] round has die for each [illegible] and punches [illegible] hole for [illegible] inch. Level [illegible] each of [illegible] punches [illegible] best Steel [illegible] and [illegible] tem pered. weight 135 lbs., each $75.00

[illegible] The operator stands directly over his work with entire [illegible] At [illegible]

Cast Iron Swage Blocks

Shape [illegible] No. [illegible]

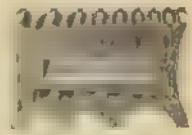
Shape of No. [illegible]

Shape of No. [illegible]

Shape of No. 5

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Cast Iron Swage Blocks



Shape of No. [illegible]

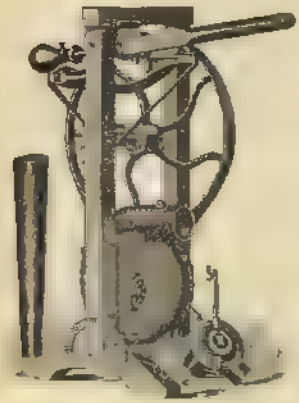
No. [illegible] Measures [illegible] Weight about 150 pounds

Shape [illegible] No. [illegible]

No. [illegible] Weight [illegible]

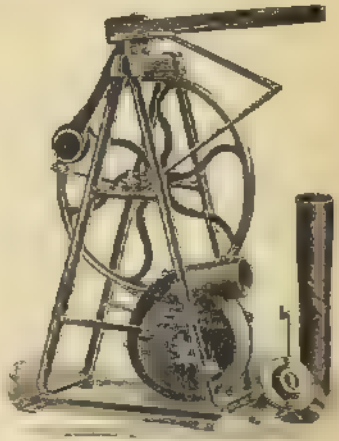
Weight [illegible]

CHAMPION BLACKSMITH BLOWERS.



No. 1894 [illegible] fan 28 [illegible] wheel, capacity 50 [illegible] with patent adjustable nozzle. Frame iron and [illegible] 125 [illegible] ca [illegible] $12 00

The [illegible]



No. 1898 [illegible] 15 in. dia. 28 in. fly wheel, with tuyere and piping [illegible] lbs [illegible] $20 00

No. 1899 [illegible] ned other [illegible] $ PC

[illegible]

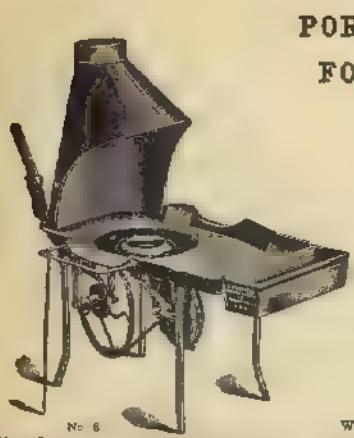
No. 400 [illegible] parts cut [illegible] all [illegible] 2 [illegible] $ 7

This [illegible]

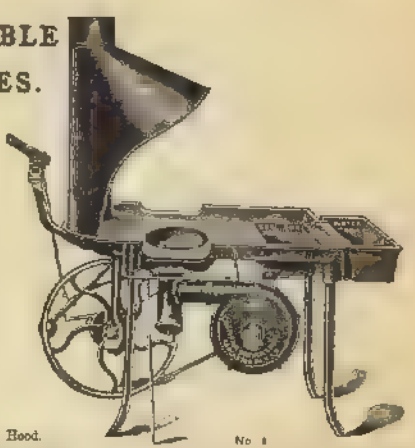
PATENTED BALL-JOINT BRASS OSCILLATING JOURNAL BEARING.

[illegible]

PORTABLE FORGES.



No. 6



No. 1

With Half Hood.

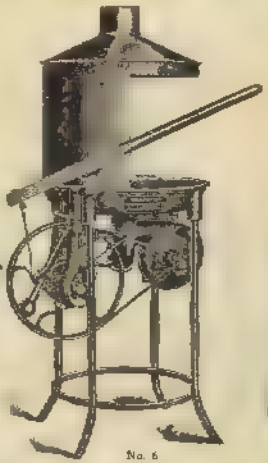
No. 61 —Champion Imperial Backet this lever forge self acting ratchet lever motion, 3 hardened tool steel self acting pawls dips all bearings hearth 32x45 in. height 3½ in. and 4 in. without water tank, weight 250 lbs., each $50.00

No. 61½—With water tank otherwise same as No. 61 weight 275 lbs. " 55.00

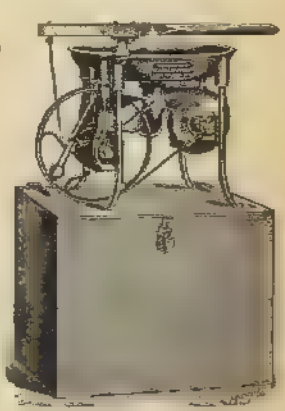
No. 1 —Champion new standard 90lb improved backet this lever forge patented ball and brass oscillating journal bearings, sloped bottom coal box, hearth 32x45 in. height 36 in. 6 in. with pressure blast wheel, without water tank, weight 350 lbs., each 50.00

No. 1½—With water tank, otherwise same as No. 1, weight 375 lbs. " 55.00

Nos. 408 and 409



No. 6



No. 8

No. 408 —Champion steel horse shoers forge best tool steel anvil, phosphor bronze machinery parts, half hood hearth 30x36x6 in. height 30 in. 2 in. without water tank weight 225 lbs. each $65.00

No. 408½—With water tank, otherwise same as No. 408 weight 250 lbs., " 70.00

No. 409 —Champion steel blacksmiths forge hearth 30x40x6 in. otherwise same as No. 408 weight 250 lbs " 70.00

No. 409½—With water tank otherwise same as No. 409 weight 275 lbs. " 75.00

No. 6 —Champion standard tool makers lever forge half hood hearth 22 in. in diameter height 33 in. fan 9 in. weight 85 lbs., " 27.00

No. 7 —Champion standard jewelers lever forge with closed hood otherwise same as No. 6 weight 70 lbs " 30.00

No. 8 —Champion standard miners and prospectors lever forge, hearth 22 in. diameter fan 9 in. with case weight 100 lbs., " 25.00

No. 8½ —With case, otherwise same as No. 8 weight 150 lbs. " 26.00

PORTABLE FORGES.

No. 4—[illegible] boiler makers lever forge [illegible] shield, especially adapted for boiler makers, iron bridge and ship builders, railroad contractors, miners, tank builders etc., hearth 23x35 [illegible] height 30 in., fan 12½ in., weight 120 lbs. - - each $36.00

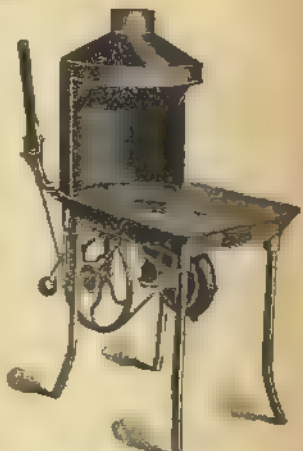
No. 3—CHAMPION [illegible] lever forge, with half hood, designed [illegible] combine [illegible] numbers, miners, marble workers, millers, railroad repair shops, locksmiths, [illegible] and manufacturers in general, otherwise same as No. 2, weight 30 lbs., - - - - - each 40.00

No. 4—CHAMPION STANDARD, machinists lever forge, with full hood, having 2 doors, 1 in front and 1 in rear, thus preventing escape of sparks [illegible] and planing mills, oil refineries, varnish works, and by jewelers, dentists, etc., weight 140 lbs., - - each 42.00

No. 2.

No. 82—CHAMPION IMPERIAL, boiler makers lever forge, with [illegible] and [illegible] for [illegible] tank builders etc., [illegible] in height 30 in., [illegible] weight 200 lbs. [illegible] each 36.00

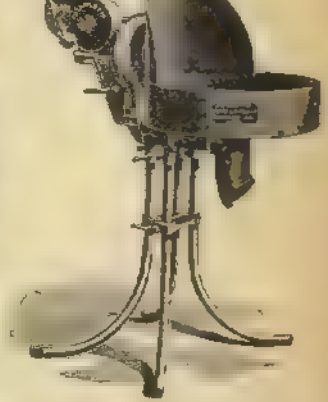
No. 83—CHAMPION IMPERIAL, machinists lever forge, with half hood, adapted for architects, plumbers, marble workers, millers, railroad repair shops, locksmiths, planters, etc., otherwise same as No. 82, weight 30 lbs. each 40.00



No. 84.

No. 5.

No. 85.



No. 401.

No. 5—CHAMPION STANDARD, lever rivet forge, with shield, designed for all kinds of light portable work, hearth 22 in. and smaller height 33 in., fan 10 in., weight 80 lbs., - - - - - each $24.00

No. 85—CHAMPION IMPERIAL, lever rivet forge, with shield designed for all kinds of light portable work, hearth 22 in. diameter height 33 in., fan 9½ in., weight 80 lbs., - - - - - each 24.00

No. 86—CHAMPION tool makers, lever forge, with half hood adapted for sharpening tools in elevated roads, tank and bridge builders, miners, prospectors, boiler repairing, artisans, etc., otherwise same as No. 85, weight 90 lbs. - - - each 27.00

No. 87—CHAMPION IMPERIAL, very large, with hood very desirable for use where combustible material is kept to prevent escape of sparks or fumes, otherwise same as No. 85, weight 90 lbs. - - - - each 30.00

No. 401—CHAMPION, steel rivet forge, made of structural steel, very strong, stiff and light, adapted for government use, steel and steam railroads, bridge and tank builders, miners and prospectors, boiler repairers, or any portable work requiring compactness and lightness, with a strong blast, with shield, hearth 18 in. in diameter height 30 in., fan 9 in., weight 90 lbs., - - - each 35.00

PORTABLE FORGES.

No. 150

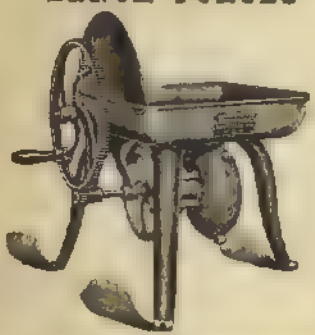
No. 151

Nos. 152 and 153.

No. 150—CHAMPION agricultural lever forge, with round hearth 8 in. in diameter depth 4 in. height 30 in., weight 65 lbs. each $ 4.00
No. 151—CHAMPION, agricultural lever forge, with half round hearth same as No. 150, weight 75 lbs. " 6.00
No. 152—CHAMPION agricultural lever forge with shield, hearth 8 in. in diameter depth 4 in. height 30 in., weight 65 lb " 4.00
No. 153—CHAMPION, agricultural crank forge with half round hearth same as No. 152, weight 75 lbs. " 6.00

NOTE. Forges are sent only by freight or former size or right requiring more of any kind.

BENCH FORGES



No. 21—CHAMPION crank forge with round hearth 6 x 7 in., fan 7 in., wt 45 lbs. each $15.00
No. 22—CHAMPION, crank forge with half round hearth 14 x 7 in., fan 7 in., wt 55 lbs. each 15.00
No. 23—CHAMPION, crank forge, with full round hearth 14 x 17 in., fan 7 in., wt 65 lbs., each 20.00

These are extremely useful for light work, forge very compact and easily moved, using short pipe, so when not needed they may be set on bench. Will produce a welding heat as 3 in. iron in ten minutes. It is a very convenient forge for prospectors.

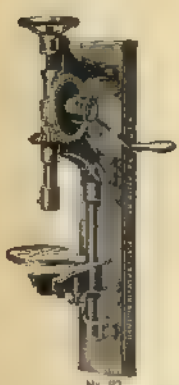
POWER BLOWERS.

Champion.

No. 0—Will blow one fire, height 10 in., wt 15 lbs. each $ 8.00
No. 00—Will blow two ordinary fires, height 14 in., wt 30 lbs. each 10.00
No. 000—Will blow three ordinary fires, height 18½ in., wt 50 lbs. each 12.00
Arranged for Exhaust Purposes, extra 2.00

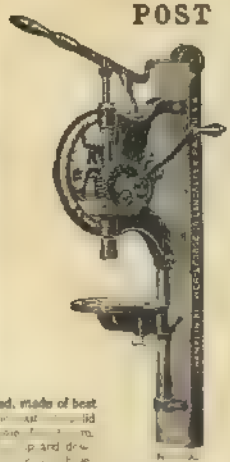
This blower is suitable for blowing fires in portable and small stationary hearths, such as for forge fires, and various purposes where a small current of air is desired.

POST DRILLS.



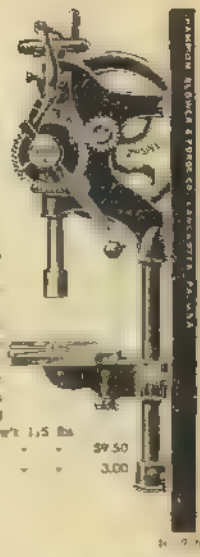
No. 92.

No. 92—Champion, hand feed, made of best material throughout, bearings ground in solid metal, feed gear and pinion cut from solid metal, takes in straight shank drills 5/16 in. and down, bored and ground table, 2 speeds, with back gear, wt. 65 lbs. each $4.50



No. 100 Champion, lever feed, backgear, made of best material, bearings ground in solid metal, feed spindle bored, takes in straight shank drills 5/16 in. and down, runs drills to center 14 in. circle, feeds from 0 to 3 in., with backgear, wt. 150 lbs. each $8.00

Extra, for power



No. 93½ Champion self feed, backgear, made of best material, bearings ground in solid metal, feed spindle bored, takes in straight shank drills 5/16 in. and down, drills to center 15 in. circle, feeds from 1/16 to 1/4 in., 2 speeds, full back gear, wt. 145 lbs. each $9.50

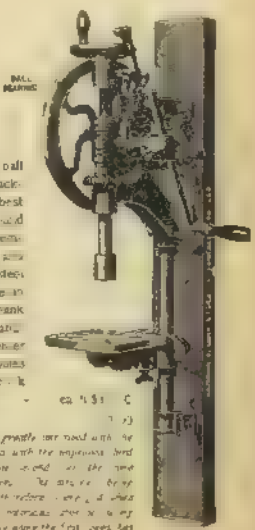
Extra, for power, 3.00

No. 101.

No. 101 Champion, self feed, backgear, made of best material, bearings ground, feed from solid metal, feed spindle bored to take in straight shank drills 1/2 in. and down, runs to center of 2 in. circle, feeds from 0 to 3 in., single speed, with back gear, wt. 180 lbs. each $7.00

No. 98—Champion, self feed, backgear, made of best material, bearings ground, feed from solid metal, feed spindle bored to take in straight shank drills 1/2 in. and down, runs to center of 2 in. circle, feeds from 0 to 3 in., 2 speeds, with back gear, wt. 195 lbs. each $8.50

Extra, for power for No. 98, 3.00



No. 95 New Champion, ball bearing, all steel, made of best material, bearings ground, all of solid metal, countersunk steel cap screws, 1/4 in. steel spindle, bored to take in straight shank drills 3/4 in. and down, drum, driver and feed gears cut from solid metal, feeds from 0 to 3 in., back geared, wt. 125 lbs. each $11.00

Extra, for power 3.00

The manufacturers have given great care to the selection of the materials used in the construction of this drill, and have spared no pains in the workmanship, so that we can confidently recommend it as the best drill for the money that we have ever handled. We are sure that any purchaser will be entirely satisfied with the quality of the work done by it, and that the materials and workmanship will be found to be of the best. We guarantee every drill to be free from defects in material and workmanship for one year from date of purchase, and will replace any part which, under fair use, proves defective within that time. We will not be responsible for any damage resulting from the use of the drill, nor for the breakage of any part, except as above stated.

No. 95

Fine Separable Collar Buttons

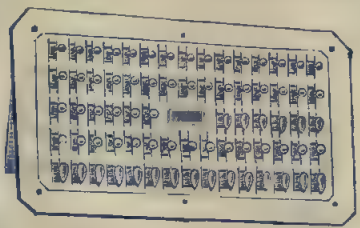
No. 70. Plain top and back. Doz. ..... .27
No. 73. Engraved mother of pearl top, plain back. Dozen ..... .27
No. 74 As above, pearl inlaid back. Doz. ..... .37
No. 75. Cut stone top assorted colors, plain back. Dozen ..... .27
No. 76. As above, inlaid pearl back. Doz ..... .37

No. 71. Moonstone top, plain back. Doz. ..... .27
No. 78. As above, pearl inlaid back. Doz. ..... .37
No. 85. Goldstone top, pearl back. Dozen..... .55
No. 87. Engraved top, diamond center, pearl back. Dozen ..... .55
No. 86. Plain pearl top and back. Doz. ..... .55

FAVORITE COLLAR BUTTON ASSORTMENTS

Assorted Collar Buttons in attractive celluloid case.

No. 193. Acid proof, gold plated collar button assortment, celluloid backs Put up 6 dozen assorted, in handsome glass celluloid case, one dozen each of the following styles: Large pointer, large ball top, large lever, small pointer, flat top stationary and small lever Case of 6 dozen 1.00



No. 195. Plated top collar buttons, celluloid backs, put up 6 dozen on facy celluloid pad, easel back, assorted staple designs, levers, pointers, ball tops, stationary flat tops; a very complete assortment for a small amount of money. Pad of 6 dozen ..... .50
No. 196. As above, rolled gold plate, celluloid backs Pad of 6 dozen ..... .65
No. 197. As above, solid pearl back, riveted, assorted. Pod of 6 dozen ..... .85
No. 198. As above, gold filled plated solid button Pad of 6 dozen ..... .85
No. 199. As above, solid pearl back, sterling silver riveted, high grade button. Pad of dozen..... 1.50

Collar Buttons assorted kinds in a neat display box. Large variety.

..**No. 1930.** Our new collar button assortment comprising 12 dozen collar buttons, pearl back, sterling silver riveted, 8 different styles, consisting of large pointers, small pointers, small and large levers, and small and large ball stationary tops, in an attractive plush lined display show case with glass top. Inside of case is fitted with cup-like compartments, each holding one kind of button. This is an extra special offer. Per case of 12 dozen, complete 2.75

No. 4345. Containing 6 dozen gold filled and 6 dozen solid pearl back, sterling silver riveted buttons; one dozen each of the following Large pointer, small pointer, medium lever, large lever, medium ball top and medium sized stationary flat top, in gold filled, and one dozen each of the same assortment in solid pearl back, sterling silver riveted.
Box of 1 gross 9.00

NEAT JEWELED BELT PINS. LADIES' OR MISSES

A VERY GOOD ARTICLE FOR MAIL ORDER HOUSES OR SCHEME PROPOSITION.

1315

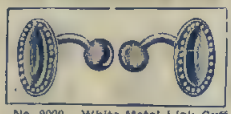
No. 1315. Belt Pin. Gold plated, bright finish, fancy embossed, solid one-piece pin with safety point, oval stone set ruby or turquoise. Each on attractive card.
Dozen ..... .10 Gross 1.00

5327

No. 5327. Belt Pin. Bright finish, set with fancy embossed turquoise stone.
Dozen ..... .10 | Gross 1.00

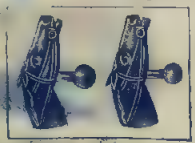
LINK STYLE CUFF BUTTONS

GOLD PLATED. Stone set in charming new effects. This is an excellent selection of up-to-date styles and profitable sellers.



No. 9000. White Metal Link Cuff Buttons, brightly polished, beaded front, full size, carded. Per gross ..... .55

No. 435. Aluminum Finish Elk Head Cuff Button. Dumb Bell ends. Gross pair. . .60



No. 335. Silver Metal Link Cuff Buttons, horse head with bridle, curved dumb-bells, look just like solid silver. Gross pair.... .60

No. 9001. Link Cuff Buttons, finished in gold or silver, oval turquoise setting, beaded edge.
Per dozen ..... .12
Per gross 1.35

3461 3701

No. 3461. Square shape, set with large colored stone, fancy embossed dumb-bell link, ruby amethyst and turquoise center.
Per dozen ..... .18
Per gross 1.75
No. 3701. Link Cuff Button, bright finish, inlaid with assorted colored celluloid.
Per dozen ..... .35
Per gross 4.00

1682 1682

No. 1682. Rolled gold plate, high finish fancy embossed oblong and square shapes.
Per dozen ..... .40
Per gross 4.50

8460 8462

No. 8460. Lever Link, bright finish in assorted stones showing cats, dogs, horses and other animals.
Per dozen ..... .40
Per gross 4.50
No. 8462. Lever Link, bright finish with assorted fancy colored stone centers.
Per dozen ..... .40
Per gross 4.50

3575 6188

No. 3575. Lever Link Cuff Button, bright finish, oval shape, set with rubies, opals, emeralds and assorted colored stones. Big value.
Per dozen ..... .40
Per gross 4.50
No. 6188. Lever Link Cuff Button, square shape, bright finish, set with cut stones such as rubies, emeralds, opals and other colored stones.
Per dozen ..... .40
Per gross 4.50

8462X 8435

No. 8462X. Lever Link, bright finish, assorted stone centers.
Per dozen ..... .40
Per gross 4.50
No. 8435. Lever Link Cuff Button, gold plated, polished mother of pearl set, one gold band across. Per dozen ..... .45

8435 8485

No. 8435. Lever Link Cuff Button, gold plate, oval shape, colored glass center with incrusted floral design inside, brightly polished. Per dozen..... .50
No. 8485. Lever Link, bright finish, fancy carved mother of pearl center with striped bands across. Per dozen ..... .65

8413 8413

No. 8413. Link Buttons, two color effect in oval, round and assorted shapes. Per dozen. .... .75

8470 8478

No. 8470. Lever Link, bright finish, set with genuine United States penny. Per dozen..... .75

No. 8478. Lever Link, two color frosted design in round, oval and square shape white stone centers. Per dozen..... .80

8479 6195

No. 8479. Lever Link, assorted pearl centers, fancy cut out.
Per dozen ..... .90

No. 6195. Cuff Buttons, lever link with carved mother of pearl center, gold band. Per dozen. 1.00

8418 8452

No. 8448. Lever Link, bright finish, fancy embossed, assorted colored stone centers. Per doz. 1.00

No. 8452. Lever Link, plain polished, with good quality brilliant stone center.
Per dozen ... 1.00

Link Style Cuff Buttons

GOLD PLATED, CHASED AND STONE SET DESIGNS

6173 8449

No. 6173. Lever Link Cuff Buttons, gold front design, handsomely engraved in bright polish. Per dozen 1.00

No. 8449. Lever Link, bright finish, fancy embossed, small colored stone centers
Per dozen 1.00

6189 6190

No. 6189. Cuff Buttons, lever link, handsomely embossed, bead edge, bright finish with raised Roman center. Per dozen..... 1.00

No. 6190. Cuff Buttons, lever link, bright finish, handsomely chased design, assorted colored stone centers. Per dozen 1 00

8447 8446

No. 8447. Lever Link, gold front design, oval shape, hand chased Per dozen 1.00

No. 8446. Lever Link, bright finish, fancy embossed diamond shape gold stone setting.
Per dozen 1.00

8453 6175

No. 8453. Lever Link, rose color finish, fancy embossed, stone center. Per dozen..... 1.00

No. 6175. Lever Link Cuff Button, gold front design, with fancy hand engravings, pearl or white stone setting.
Per dozen 1.20

6182 6193

No. 6182. Cuff Buttons, lever link, Roman finish, handsome knot design with assorted stone centers. Per dozen 1.20

No. 6193. Cuff Buttons, lever link, lovers' knot design, handsomely chased with assorted colored stone center.
Per dozen 1.20

6174 6177

No. 6174. Gold Front Lever Link Cuff Buttons, heart shape design, half polished, half Roman chased, brilliant white stone setting.
Per dozen 1.20

No. 6177. Gold Front Lever Link Cuff Button, bright finish, set with assorted colored stone centers
in chased design. Per dozen.. 1.20

6176 6239

No. 6176. Gold Front Lever Link Cuff Button, bright finish, handsomely chased, white brilliant setting. Per dozen 1.20

No. 6239. Lever Link Cuff Buttons, gold filled, polished, extra quality plate, with floral embossed design. Per dozen..... 1.20

6240 6238

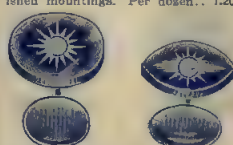
No. 6240. Lever Link Cuff Buttons, extra quality plate, round polished, brilliant set center.
Per dozen 1.20

No. 6238. Lever Link Cuff Buttons, Marquise design, polished gold, extra quality plate, brilliant set center.
Per dozen 1.20

6191 6237

No. 6191. Cuff Buttons, lever link, handsomely chased, bright finish with raised star brilliant setting, per dozen. 1.20

No. 6237. Lever Link Cuff Buttons, extra quality plate, set with beautiful gold stone, round polished mountings. Per dozen.. 1.20



6142 8422

No. 6142. Link Cuff Button, plain bright polished, set with extra quality white brilliant.
Per dozen 1.50

No. 8422. Lever Link Cuff Buttons, fine rolled gold plate, polished, oval shape design, first quality brilliant setting. Per dozen.. 1.50

6147 6139

No. 6147. Link Cuff Button, bright finish hand engraved, set with ruby sapphire and brilliant combination. Per dozen 1.50

No. 6139. Link Cuff Button, extra quality plate plain finished design, set with first quality 1-karat brilliant. Per dozen.. .. 1.50

8419 6233

No. 8419. Lever Link Cuff Buttons, heavy oval patterns, rich Roman gold finish, set with three fiery brilliants, first quality. Per dozen 1.50

No. 6233. Lever Link Cuff Buttons, extra quality plate, polished round shape, set with three fiery brilliants Per dozen ... 1.50

Link Style Cuff Buttons

Here are the biggest values ever priced at $1.50 a dozen. As good and nice as any 50 cent goods in the market.

8402 8476

No. 8402. Lever Link Cuff Buttons, good gold front, new embossed design, brightly polished, assorted colored stone settings in center. Per dozen..... 1.50

No. 8476. Lever Link, bright finish, fancy embossed with brilliant stone center, two colored stone set sides. Per dozen..... 1.50

8404 8405

No. 8404. Lever Link Cuff Buttons, gold front pressed design, round curb shape, set with colored stones, assorted. Per dozen 1.50

No. 8405. Lever Link Cuff Buttons, gold front, new emblem design, set with first quality colored stones, assorted. Per dozen 1.50

6234 8427

No. 6234. Lever Link Cuff Buttons, extra quality plate, open work frame with pearl stone back, polished; rich effect. Per dozen 1.50

No. 8425. Lever Link Cuff Buttons, extra quality gold plate, raised Egyptian portrait design, rose gold finish, polished trimmings. Per dozen 1.50

8482 8475

No. 8482. Lever Link, bright finish, fancy design set with first quality brilliant centers. Per dozen 1.50

No. 8475. Link Buttons, bright finish, fancy embossed with opal centers. Per dozen 1.50

6201 6202

No. 6201. Rolled gold, very good plated stock, bright polished K. of P. emblem in colored hard enamel, hand finished. Per dozen 1.50

No. 6202. As above, Modern Woodmen. Per dozen. . 1.50

6203

No. 6203. Rolled gold plated, bright finish, hand enamel top in colors. Masonic order. Per dozen 1.50

No. 6204. As above, Odd Fellows. Per dozen..... 1.50

6194 8423

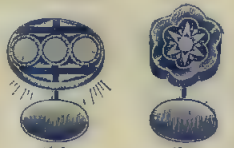
No. 6194. Cuff Button, lever link, Order of Eagles, handsomely cut out and raised embossed Eagle, elegant enamel rim in colors. Per dozen 1.50

No. 8423. Lever Link Cuff Buttons, fine quality gold plate, raised floral pattern and scroll design, Roman and polished finish. Per dozen 1.50

8480 8481

No. 8480. Lever Link, bright finish, fancy embossed center set with three first quality brilliants. Per dozen 1.50

No. 8481. Lever Link, bright finish, handsomely embossed scale design, center set with brilliant stone. Per dozen..... 1.50



6185 6186

No. 6185. Cuff Buttons, colored gold fancy chased, set with three extra quality pearls. Per dozen 1.50

No. 6186. Cuff Buttons, lever link, three colored gold, handsomely chased star center set with pearl stone setting. Per dozen. 1.50

6235 6243

No. 6235. Lever Link Cuff Buttons, extra quality gold plate mounting, chased pearl top with beaded gold band across. Per dozen 1.50

No. 6243. Lever Link Cuff Buttons, fine gold plate, scroll frame work design, mother of pearl back, fine flashy pattern. Per dozen 1.50

8426 8400

No. 8426. Lever Link Cuff Buttons, raised Greek portrait design, Roman gold finish, polished trimmings, fine gold plate. Per dozen 1.50

No. 8400. Lever Link Cuff Buttons, large oval shape, Roman gold finish with crescent on side finished in assorted colors of enamel with embossing. Per dozen 1.50

8420 8401

No. 8420. Lever Link Cuff Buttons, extra quality gold plate, heavy embossed design with signets, brightly polished. Per dozen.. 1.50

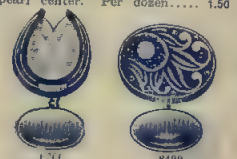
No. 8401. Lever Link Cuff Buttons, raised embossed pattern, fine colored stone set center, polished gold, extra quality plate. Per dozen 1.50

LINK STYLE CUFF BUTTONS—A Choice Selection of Exclusive Designs

3557 3558

No. 3557. Link Cuff Button, extra quality plate, fancy beaded design, set with 6 French pearls. Per dozen 1.50

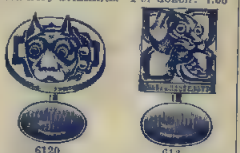
No. 3558. Link Cuff Buttons, buckle effect, with mother of pearl center. Per dozen..... 1.50



6200 8429

No. 6200. Cuff Buttons, lever link, bright finish horseshoe design, fancy carved genuine mother of pearl with horseshoe nails riveted; one of the new things of the season. Per dozen..... 1.50

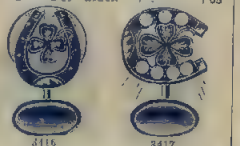
No. 8429. Lever Link Cuff Buttons, extra quality plate, finished in rich colored gold, scroll embossing, frosted gold mounting set with fiery brilliants. Per dozen. 1.65



6120 612

No. 6120. Link Cuff Button, bright finish, mother of pearl, with embossed bulldog head, stone set eyes. Per dozen..... 1.65

No. 6121 Link Cuff Button, extra quality mother of pearl, with embossed hunting dog and bird, stone set eyes, very handsome design Per dozen 1 65



3416 3417

No. 3416. Lever Link, polished mother of pearl, rounded shape, raised bright gold plated, horseshoe with hard enamel green four leaf clover in center. Per dozen 1.65

No 3417. Rolled gold plate, bright finish, horseshoe shape, set with seven brilliants and hard enameled clover leaf center. Per dozen 1.65

6241 8430

No. 6241. Lever Link Cuff Buttons, lion head raised design, rose gold finish, fiery brilliant set in mouth, a beautiful pattern. Per dozen 1.65

No. 8430. Lever Link Cuff Buttons, round fine gold plate top, embossed finish in frosted, polished and colored gold, brilliant set center. Per dozen 1.65

6243 8428

No. 6243. Lever Link Cuff Buttons, embossed design, gold plated, beautiful colored frosted gold effect finish. Per dozen..... 1.65

No. 8428. Lever Link Cuff Buttons, floral shape, brilliant set center, embossed scroll design, colored and frosted gold finish very handsome. Per dozen. . 1.65

6247 6213

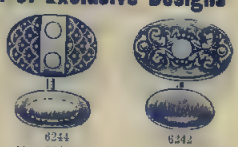
No. 6247. Lever Link Cuff Buttons, new fancy design, embossed raised center, good quality plate, each set with three brilliants, polished. Per dozen..... 1.65

No. 6213. Lever Link Cuff Buttons, fine grade plate top, embossed Greek portrait design, with scroll work, Roman gold finish, polished trimming. Per dozen 1.65

6245 6246

No. 6245. Lever Link Cuff Buttons, extra quality plate, polished top, new embossed pattern, almondine, amethyst and other stone setting. Per dozen..... 1.65

No. 6246. Lever Link Cuff Buttons, unique embossed design, crescent shape pattern set with three brilliant stones, assorted colors, polished. Per dozen 1.65



6244 6242

No. 6244. Lever Link Cuff Buttons, new embossed design, band across center, set with two fiery brilliants, Roman gold finish, extra quality gold plate. Per dozen 1.65

No. 6242. Lever Link Cuff Buttons, oval shape, fine gold plate, fancy raised embossing in colored gold, with fiery brilliant center Per dozen 1.65

8485 8484

No. 8483. Lever Link, two color effect, handsomely embossed with good quality brilliant settings. Per dozen 1.65

No. 8484. One Piece Solid Pearl Dumb Bell Links, in assorted patterns. Per dozen. . 1.80

6227 6228

No. 6227. Lever Link Cuff Buttons, finely embossed, finished in frosted effect, polished trimmings, set with two beautiful brilliants. Per dozen 2.40

No. 6228. Lever Link Cuff Buttons, extra quality plate, very fine frosted colored gold, finely polished trimmings, floral design set with fiery brilliants. Per dozen. 2 40

6231 8491

No. 6231. Lever Link Cuff Buttons, 14k gold filled, Roman gold finish, oval shape raised design, set with three brilliants. Per dozen 3.00

No. 8491. Lever Link, Roman finish, 14k gold filled stock set with three pearls Per dozen 3 60

LINK STYLE CUFF BUTTONS

Solid Gold Patterns, High Grade Gold Filled Excellent Wearing Goods

6211 6224

No. 6211. Lever Link Cuff Buttons, Greek head pattern with floral embossings, finished in colored and rose gold with colored trimmings, high grade gold plate; very fine goods. Per dozen 3.60

No. 6224. Lever Link Cuff Buttons, fine stock plate, rose gold finish, portrait and floral design set with three beautiful brilliants; very handsome. Per dozen.... 3.60

6226 6212

No. 6226. Lever Link Cuff Buttons, new raised design, Roman gold finish, gold filled stock guaranteed, set with five brilliants. Per dozen 3.60

No. 6212. Lever Link Cuff Buttons, fine gold plate, new design, rose gold finish, polished trimmings, set with large almondine, amethyst and other stones Per dozen 3.60

6225 8493

No. 6225. Lever Link Cuff Buttons, very fine 14k gold plate, oval shape, polished, set with three fiery brilliants. Per dozen.... 3.60

No. 8493. Lever Link, rose color finish, fancy embossed, set with two first quality brilliants, each button stamped "H. & A." guaranteed to give satisfaction. Per dozen 3.60

8492 8490

No. 8492. Lever Link, rose color finish, handsomely embossed, made of 14k gold filled stock, each button stamped "H. & A."; guaranteed goods. Per dozen..... 3.60

No. 8490. Yale Dumb-bell Link, Roman finish, brilliant stone center, strictly one piece; guaranteed to give satisfaction or a new pair furnished. Per dozen..... 4.00

8489 8488

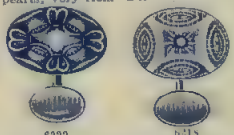
No. 8489. Yale Dumb-bell Link, rose color finish, beaded edge, set with assorted color light tinted stones, strictly one piece. Per dozen 4.00

No. 8488. Yale Dumb-bell Link, Roman finish; buttons are strictly one piece, entirely without solder; brilliant stone set; every button guaranteed or a new one furnished free. Per dozen..... 4.00

6220 6227

No. 6220. Dumb Bell Cuff Buttons, Roman and rose gold finish, with polished trimming, fine stock plate, guaranteed to wear. Per dozen 6.00

No. 6221. Dumb Bell Cuff Buttons, fine Roman gold finish on stock plate, guaranteed to wear, raised pattern set with 8 seed pearls; very rich. Per dozen.. 6.00



6222 6218

No. 6222. Dumb Bell Cuff Buttons, high grade gold filled, hand burnished, rose gold finish, sold one piece, guaranteed goods Per dozen 6.00

No. 6218. Dumb Bell Cuff Buttons, fine gold filled, hand burnished, Roman gold finish, unique design, genuine pearl set, very fine goods. Per dozen..... 7.50

6219 6215

No. 6219. Dumb Bell Cuff Buttons, fine grade filled stock, hand burnished, old English finely embossed design, brilliant set center, guaranteed goods. Dozen.... 7.50

No. 6215. Dumb Bell Cuff Buttons, Venetian finish, fine gold filled stock, floral design set with three pearls, latest cut, guaranteed Per dozen..... 9.00

6214 6216

No. 6214. Dumb Bell Cuff Buttons, very fine high grade gold filled, polished signet top, embossed border, finished in rose gold, guaranteed goods. Per dozen 9.00

No. 6216. Dumb Bell Cuff Buttons, half polished, half colored gold finish, hand chased, solid gold front, fine guaranteed goods. Per dozen..... 9.00

6217

A Very Special Hand Chased Design in a Quality That Will Wear Like Solid Gold.

No. 6217. Dumb Bell Cuff Buttons, hand chased, solid gold front, floral pattern, brightly polished, guaranteed goods Per dozen 9.00

CUFF BUTTONS with AUTOMATIC LEVER BACK

With certain classes this is still a popular Button and should be as a complement in every Jeweler's stock.

Back View

This illustration shows the back view of the automatic lever in position when the button is in service. Lift the ends up and button slips out easily. Always secure.

9024 9025

No. 9024. Fancy cut star and other patterns, assorted color celluloid, brilliant center stone; a big seller. Per dozen..... .40

No. 9025. Gold plated, fancy engraved, square frame, colored stone tops, assorted colors, inlaid designs. Per dozen. ..... .50

MAMMOTH STORE LAMPS.

300 Candle Power.

Burns 12 Hours.

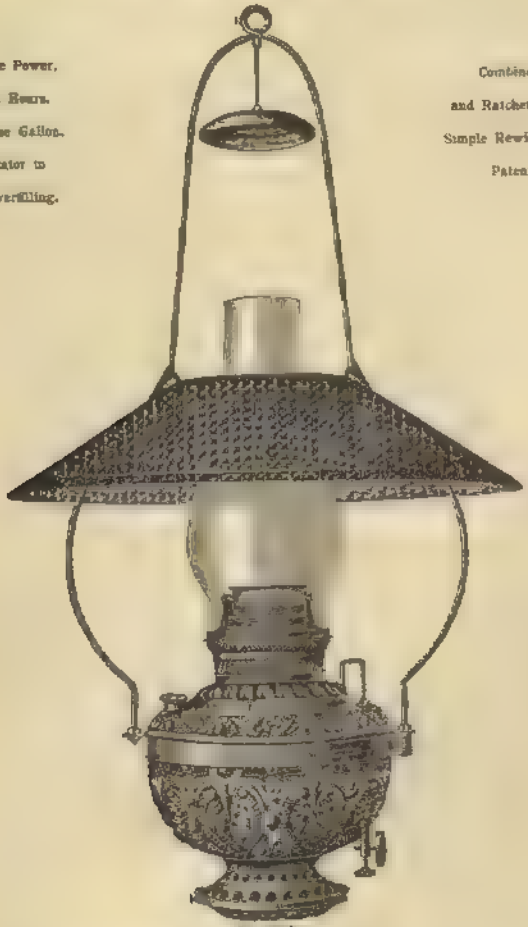
Capacity One Gallon.

Oil Indicator to Prevent Overfilling.

Combined Screw and Ratchet Movement.

Simple Rewicking Device.

Patent Drip.



Junc, Central Draft, Embossed Fount

No. D1114—Polished brass, 14 in. wh[illegible] lbs. each 55 50

No. D01114—Nickel plated, 14 in. wh[illegible] 6 00

No. D1120—Po[illegible] lbs. 5 75

No. D01120—Nickel plated, 20 in. [illegible] 7 lbs. 5 75

No. D1128—Polished brass w[illegible] 4 75

No. D01128—Nickel plated, [illegible] 5 25

INCANDESCENT VAPOR LAMPS.

No. 120.

No. 100.

No. 190.

No. 120—Brass, polished and lacquered complete with chimney and marine w't 9 lbs., . . . each $ 4 50

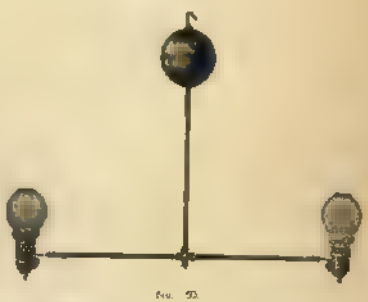
No. 100—Oxidized copper finish, on brass, complete with chimney, engine and ribbed shade w't 12 lbs., . . 6 5[illegible]

No. 190—Oxidized copper finish, on brass, complete with [illegible] globes and dome shades w't 14 lbs., . . 2 [illegible]

ONE IN A BOX

No. 200.

No. 30.



No. 50.

No. 200—Oxidized copper finish, on brass, complete with marine and air hole globe w't [illegible] . . . each $ 4 [illegible]

No. 150—Brass, polished and lacquered, complete with marine and air hole globe w't 9 lbs. . . . [illegible]

No. 150—Oxidized copper finish, on brass, complete with marine and air hole globes, length of drop 26" fixture 6" from apart w't 14 lbs. . . . each [illegible]

The [illegible] construction. Each burner has only one valve and therefore any [illegible] each lamp [illegible] per [illegible] state of [illegible] globes complete.

All [illegible] companies will issue permits for the use of these lamps without extra premium [illegible] they are approved by the National Board of Fire Underwriters.

ONE IN A BOX

Six size globes weighing [illegible] on the above.

INCANDESCENT VAPOR LAMPS.

No. 256

No. 256 N[illegible] ...ated ra brass ... plete with ...inger mandel and ... dome shade, wt 2 lb ... each $ 6 50

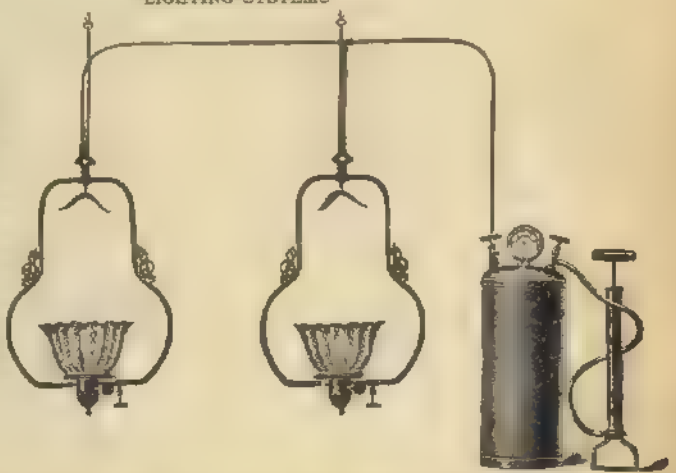
No. [illegible] Ar... ...ring ... ...ck ... ...qui... ...ours w... ...h
...ach 4 00
...g and pumping, complete w... ...pa... ...ra de...g the w... B...

No. 1 Arc ...duced c...per ...d brass ...DC ... capac... ...lb ... 15 ho... ...with the ...ng and pumping, complete ...upper ...with 24 in. nickle reflector, complete w... ...not pum... mantle, globe and ...
...each 8 50
...ring, ... w... lbs ... 15 00

No. 01 Arc without spring ex... ...otherwise same as No. 1 w... 2 lbs ... 15 00

ONE IN A BOX

LIGHTING SYSTEMS



...ch these systems is ... ...ecessary ... ...ure the light, when filling ... ...ere is a certain point ... ...ght is ... ...s gave ... ...ed, and ... ...ly the ... ...ure ... ...ure ... ...ure

INCANDESCENT MANTLES.

REV-O-NOC.

No. 40.

No. 41.

No. 40—Rev-o-noc, loop mantle, with wire hook support, per dozen, - - - - - - $3.00

No. 41—Rev-o-noc, cap mantle, mounted on double wire cap, will fit any standard burner, - - per dozen 3.60

These are highest grade single stitch mantles and will give absolute satisfaction.
PACKED IN BOXES OF 12 AND 50 EACH.

H. S. B. & CO.

No. 38.

No. 39.

No. 38—H. S. B. & Co. loop mantle, with wire hook support, per dozen, - - - - - - $3.00

No. 39—H. S. B. & Co. cap mantle, will fit any standard burner mounted on double wire cap, - - per dozen 3.60

These are highest grade seamless cloth mantles, durable and prolific.
PACKED IN BOXES OF 12 AND 50 EACH.

TANIVY

No. 20.

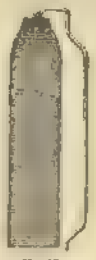
No. 21.

No. 20—Tanivy loop mantle with wire hook support, per dozen, - - - - - - $2.80

No. 21—Tanivy cap mantle mounted on double wire cap, will fit any standard burner, - - - per dozen 2.40

Good grade single stitch mantles.
PACKED IN BOXES OF 12 AND 50 EACH.

REV-O-NOC.


No. 10.

No. 11.

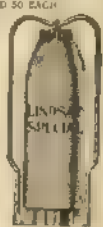
No. 10—Rev-o-noc, pressure mantle, with wire hook support, per dozen, - - - - - - $3.60

No. 11—Rev-o-noc, pressure cap mantle, mounted on special reinforced gauze cap, will fit any pressure lamp, per dozen 4.20

These mantles are made of the heavy stitch for use on pressure gasoline lamps. Are 5 inches long and a better mantle for this purpose cannot be made
PACKED IN BOXES OF 12 AND 50 EACH.

LINDSAY.

No. 5.

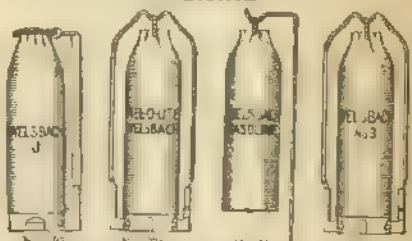

No. 5A.

No. 5—Lindsay, center rod cap mantle, mounted on imported heavy magnesia rod and corrugated cap, - per dozen $4.20

No. 5A—Lindsay side rod cap mantle, corrugated cap will fit any burner, - - - - - - per dozen 3.60

Above mantles are manufactured especially for use on No. 5 Lindsay light, but will fit and give satisfaction on other types of the inverted gas burners.

WELSBACH


No. 197. No. 991. No. 36. No. 3.

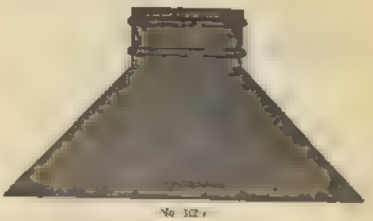
No. 197—The Original Welsbach mantle, (Ne). asbestos lined nickel wire support sheathed in a magnesia tube, per dozen, - - - - - - - $3.85

No. 991—Mel-o-gite, Welsbach mantle, same quality as "J" mantle, mounted on cap with double wire support, soft diffusion light, - - - - - - per dozen 3.25

No. 36—Welsbach, heavy weave, asbestos loop, nickel hook support for gravity gasoline lamps, - - per dozen 2.70

No. 3—Welsbach, heavy single weave, mounted on cap with double nickel wire support, - - per dozen 1.80

PORCELAIN LAMP SHADES.



No. 70— 7 in., Vienna, opal, height 5 in. [illegible] weight per dozen 6 lbs. per 5 doz. $2.50
No. 80— 7 in., Vienna green outside [illegible] 7 in. weight per dozen 5 lbs. 3.00
No. 703— 7 in. [illegible] weight per dozen 7 lbs. 2.50
No. 1059 10 in. Ring Neck Dome, opal, [illegible] top 3 ¼ in. bottom 10 in. weight per dozen 12 lbs. 5.50

ONE DOZEN IN A CASE

No. 1001

No. 1402

No. 1001 - 10 in., Ring Neck Dome, 10 in. bottom, diameter top 3½ in., height 6 in., weight per dozen 18 lbs., per dozen $6.00
No. 1402— 14 in., Plain Dome, 14 in. bottom, diameter top 6 in., height 6½ in., weight per dozen 22 lbs., 8.00

ONE DOZEN IN A BARREL

PINTSCH SYSTEM SHADES AND GLOBES.

[illegible] Shade

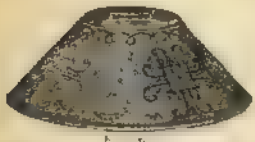
No. 100 [illegible]

No. 1850½—10 in., Opal Flint Shades, wax dome, 10 in. bottom, diameter top 4 in., height 5 in., outside measure, weight per dozen 18 lbs. per dozen $9.00
No. 100. 9 in. Crystal Globes, 9 in. top, outside measure, height 7 in. weight per dozen 24 lbs. 9.00

ONE DOZEN IN A BARREL

LAMP SHADES.

PAPER AND TIN.



No. 1062 11 [illegible] per dozen [illegible] per dozen $ 50
No. 20— 2[illegible] [illegible] per dozen 3 lbs. [illegible] 10

NO. [illegible] SIXTY DOZEN [illegible] IN A CASE

No. 28 2[illegible] bottom top 6 in. height 4 [illegible] per dozen 8 lbs. per dozen $ 4.50
No. 29. 2[illegible] bottom top 5 in. height 2 6 [illegible] per dozen 3 lbs. 1.00

NO. 28 IN A CASE, NO. 29 ONE DOZEN IN A CRATE

LAMP SUNDRIES.

Collars.

Oiler Screws and Hoops.

Solid Hoops

COLLARS.

No. 1 Brass, inside diameter [illegible] per dozen 3C 4
No. 2 Brass, inside diameter 1½ in. 33
No. 3 Brass, inside diameter 1 [illegible]e in. 60

OILER SCREWS AND HOOPS.

No. 2— Brass, size ⅝ in. per dozen $0 25

HOOPS.

No. 1 Solid brass, inside [illegible]ameter [illegible] in. per dozen $1 28
No. 2 Solid brass, inside [illegible]ameter [illegible] in. 2 15
No. 1Z Extra, solid brass inside diameter ⅝ in. 1 71

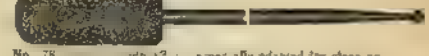
WAX TAPERS.

No. 336 [illegible] long, 50 in a box, wt per dozen 6 lbs. per dozen boxes $1 30
1 lb.

GLASS REFLECTORS.

No. 12. 5 in. silvered glass, *flat back, for No. 215 holders* wt per dozen 6 lbs. per dozen $4 25
No. 13 8 in. [illegible] wt per doz. 8 lbs. [illegible] 00
No. 14 9 in. [illegible] wt per doz. 2 lbs. 6 00
No. 16— 10 in., silvered glass, wt per doz. 18 lbs., " 9.25

CHIMNEY CLEANERS.



No. 78 [illegible]gth 13 [illegible] paper fully adapted for cleaning all Argand [illegible] per doz. 2 lbs. per dozen $2 00
ONE DOZEN IN A PACKAGE.

GAS TAPER HOLDERS.

No. 157— With key, wood handle, nickel plated frame, 29 in. long, weight per dozen 4½ lbs., per dozen $2.00

PLIERS AND WIRE CUTTERS.

COMBINED PLIERS AND WIRE CUTTERS.

Nos. 44½ to 50.

Nos. 64½ to 72.

Ajax, Cast Steel, Oiled Finish, Polished Jaws.

No.	44½	46	48	50
Inches,	4½	6	8	10
Cut wire No.,	14	11	8	6
W't per doz.,	2¼	4	7¾	11 lbs.
Per dozen,	$10.00	12.00	15.00	20.00

Genuine Button's, Cast Steel, Oiled Finish, Polished Jaws.

No.	64½	66	68	70	72
Inches,	4½	6	8	10	12
Cut wire No.,	14	11	8	6	6
W't per doz.,	2	4¼	7¾	13	24 lbs.
Per dozen,	$10.00	2.00	15.00	20.00	30.00

HALF DOZEN IN A BOX.

Crank's, Cast Steel, Bright Jaws

No. 198— 6 in., weight per dozen 9 lbs., ... per dozen $15.00
No. 200— 13 in., weight per dozen 14 lbs., ... 20.00

HALF DOZEN IN A BOX.

FENCING PLIERS

No. 614—Russell's, forged steel, bright jaws, combining wire cutter staple puller splicer and hammer length 9 in. weight per dozen 21 lbs., ... per dozen $18.00

HALF DOZEN IN A BOX.

No. 613

No. 12

No. 613—Farmer's Choice, improved pattern, fencing, forged steel, polished jaws, combining plier wire cutter and staple puller length 2 in. weight per dozen 8 lbs. . . . . per dozen $16.00

No. 12—Crank's forged tool steel, polished jaws, combining plier wire cutter staple puller and hammer length 11 in. weight per dozen 2. lbs. . . . . per dozen .8.00

HALF DOZEN IN A BOX.

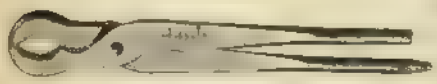
BURNER PLIERS

Extra Quality Steel, Blued Polished Jaws.

No. 5—5 in., w't per doz. 3½ lbs., per dozen $ 6.00
No. 6—6 in., w't per doz. 4½ lbs., " " 7.00

ONE DOZEN IN A BOX

GAS PLIERS.



Cast Steel, Blued, Polished Jaws.

Nos.	8	10	12
Inches	6	10	12
W't per doz.	3	5	6 lbs.
Per dozen	$ 1.50	2.50	3.50

COMBINATION PLIERS

Billings & Spencer's Genuine, Cast Steel, Combining Gas Plier, Wire Cutter, Wrench and Screw Driver.

No. 310—6 in., oil finished, w't per doz. 6 lbs., per dozen $ 3.50
No. 311—10 in., oil finished, w't per doz. 12 lbs., " " 6.00
No. 312—6 in., nickel plated, w't per doz. 6 lbs., " " 5.00
No. 313—10 in., nickel plated, w't per doz. 12 lbs., " " 9.00

ONE DOZEN IN A BOX

Cast Steel, Combining Gas Plier, Wire Cutter, Wrench and Screw Driver.

No. 320—6 in., oil finished, w't per doz. 6 lbs., per dozen $ 3.50
No. 321—10 in., oil finished, w't per doz. 12 lbs., " " 6.00
No. 322—6 in., nickel plated, w't per doz. 6 lbs., " " 15.00
No. 323—10 in., nickel plated, w't per doz. 12 lbs., " " 21.00

WRENCHES.

WESTCOTT ADJUSTABLE "S."

Forged Steel, Japanned, Polished Jaws and Edges.

No. 55—Length	6	8	10	12	14 in.
Opening	½	¾	1	1¼	1½ in.
W't per doz.	3	4	5½	7½	9½ lbs.
Per dozen	$7.20	9.00	12.00	15.00	21.00

The Westcott jaws can be opened considerably wider than the Baxter, thus making the Westcott a more serviceable wrench, although the latter has a greater capacity.

HALF DOZEN IN A BOX

BAXTER ADJUSTABLE "S."

Forged Steel, Polished, Adjustable.

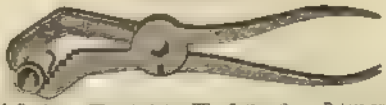
No. 50—Inches,	4	6	8	10
Opening	¼ to ¾	¾ to 1	¾ to 1¼	¾ to 1½
W't per doz.	3½	5	7½	15 lbs.
Per dozen	$6.00	9.00	12.00	18.00

THE VICTOR PIPE WRENCH

Inches		
6		$ 7.00
10	1½ to 1	7.75
12	1 7/8	9.00
14		8.00
24		6.00

COMBINATION WRENCHES AND PLIERS.

LIGHTNING.



Drop Forged Tool Steel Combining Wrench Puller, Wire Cutter, Screw Driver and Nail or Tack Puller

No. 506—	6-in. nickel plated, [illegible] in. opening, for ¼ to ¾ in. pipe, wt. per doz. [illegible] lbs.	per dozen	$12 00
No. 507—	7-in., nickel plated, [illegible] in. opening, for ⅛ to 1 in. pipe, wt. per doz. [illegible] lbs.	"	14 00
No. 508—	[illegible] nickel plated, 2⅛ in. opening, for ⅛ to 1 in. pipe, wt. per doz. [illegible] lbs.	"	[illegible]
No. 512	12-in. full polished, 4¼ in. opening, for ¼ to 1 in. pipe, wt. per doz. 27 lbs.	"	18 00

The pincers, wire cutter, [illegible] and screw driver [illegible] are of superior quality. It is not necessary to detach handle while using pipe or nuts, as pressure on one handle is all that is required for work.

6 AND 7-IN. ONE DOZEN IN A BOX. 12-IN. HALF DOZEN IN A BOX.

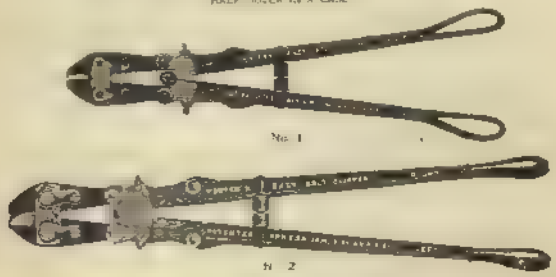
BOLT CLIPPERS.

Porter's "New Easy," Compound Lever Action, Forged Tool Steel Adjustable Jaws, Japanned Malleable Iron Handles, Rubber Buffers, All Parts Interchangeable.

No. 6—	For bolts 9/16 in. and smaller, length 18 in., weight 3 lbs.	each	$3 75
No. [illegible]	For bolts [illegible] in. and smaller, length [illegible] in., weight 4½ lbs.	"	5 00
No. [illegible]	For bolts [illegible] in. and smaller, length [illegible] in., weight [illegible] lbs.	"	7 00
No. 2—	For bolts ½ in. and smaller, length [illegible] in., weight [illegible] lbs.	"	9 00
No. 3—	For bolts ⅝ in. and smaller, length 36 in., weight 12½ lbs.	"	[illegible]

These clippers have the advantage of [illegible] length of arm.

HALF DOZEN IN A CASE



No. 1

No. 2

Porter's "Easy," Compound Lever Action, Forged Tool Steel Adjustable Jaws, Japanned Malleable Iron Handles, Rubber Buffers, All Parts Interchangeable

No. 11—	For bolts ⅜ in. and smaller, length 24 in., weight 4½ lbs.	each	$5 00
No. 12—	For bolts ½ in. and smaller, length 30 in., weight 7⅛ lbs.	"	7 00

A [illegible] wire cutter [illegible] furnished with each clipper for adjusting

HALF DOZEN IN A CASE

WRENCHES.

GIRARD AGRICULTURAL.

Wrought Iron Bar, Head and Screw, Oil Finished Hardwood Handle.

Length,	6	8	10	12	15	18	21	25 in.
Opening,	1	1¼	2	2	2½	3	4	4½ in.
Wt per doz.,	8	15	22	26	40	60	126	200 lbs.
Per dozen,	$9.00	10.00	12.00	14.00	24.00	30.00	36.00	48.00

HALF DOZEN IN A PACKAGE. 6 IN. SIX DOZEN IN A CASE. 8 IN. THREE DOZEN IN A CASE.

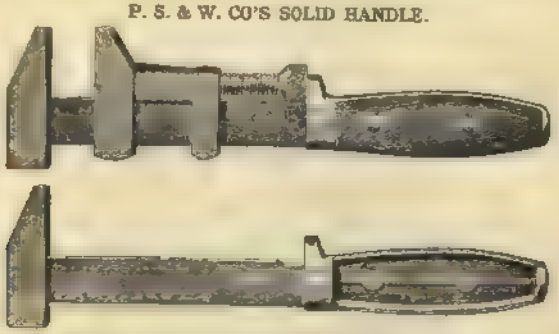
GIRARD STANDARD.

Wrought Iron Bar, Head and Screw, Oil Finished Hardwood Handle, Warranted.

Length,	6	8	10	12	15	18	18 in.
Opening,	1	1¼	1¾	2¼	2¾	3½	3½ in.
Wt per doz.,	8½	15	25	35	48	75	75 lbs.
Per dozen,	$7.00	8.00	12.00	14.00	24.00	30.00	

HALF DOZEN IN A PACKAGE. 6 IN. SIX DOZEN IN A CASE. 8 AND 10 IN. THREE DOZEN IN A CASE.

P. S. & W. CO'S SOLID HANDLE.



One Piece, Solid Steel Forging, Case Hardened, Oil Finished Hardwood Riveted Handle, Warranted.

Length,	6	8	10	12	15	18	21	21 in.
Opening,	1	1¼	1¾	2¼	2½	3	4	4 in.
Wt per doz	9	16	26	35	45	60	126	126 lbs.
Per dozen,	$7.00	10.00	12.00	14.00	24.00	30.00	36.00	

HALF DOZEN IN A WOODEN BOX WITH SLIDE COVER.
THREE DOZEN IN A CASE.

WRENCHES.,

COE'S STANDARD.

Wrought Iron Bar, Head and Screw, Hardwood Knife Handle

Length,	6	8	10	12	15	18	21 in.
Opening	⅝	1⅝	1⅞	2⅛	2½	3¼	4 in.
Wt per doz	8½	16	26	38	56	8	108 lbs.
Black, per dozen	$ 9.00	10.00	12.00	14.00	24.00	30.00	36.00
Bright, "	10.00	11.00	14.00	16.00	26.00	32.00	

6 TO A HALF DOZEN BALANCE ONE THIRD DOZEN IN A PACKAGE 4 TO A HALF DOZEN BALANCE THREE DOZEN IN A CASE

ACME STANDARD.

All Steel, Bright Hardened Jaws.

Length,	6	8	10	12	15 in.
Opening,	1⅝	1⅝	2⅝	3½	4 in.
Wt per doz.	10	15	22	36	50 lbs.
Per dozen,	$9.00	10.00	12.00	14.00	24.00

HALF DOZEN IN A BOX SIX DOZEN IN A CASE

YANKEE WRENCH PIPE JAWS.

Cast Steel, Polished, with Thumb Screws.

No. 3—2½ in. long, 1	in. between screws for 6 lbs 10 in. wrenches, weight		per dozen $4.80
No. 2—3½ in. long, 1⅝ in. between screws for 8 and 10 in. wrenches, weight			5.40
No. 1—4 in. long, ⅞ in. between screws for 8 and 10 in. wrenches, weight			6.00

Nos. 2 and 3 are also for any ordinary wrench and can be readily attached and detached.

ONE DOZEN IN A BOX

WRENCHES.

ALWAYS READY.

Forged Steel, Nickel Plated, Polished.

Nos.	1	2	2½	3
Length,	5	7	9	11 in.
For [illegible]	¾	¾	¾	⅞
Weight per doz.	[illegible]	[illegible]	24	36 lbs.
Price,	$5.00	6.75	10.00	14.00

Forged Steel, Chased Body, Polished Ribs.

Nos.	101	102
Length,	5	7 in.
For [illegible]	¾	¾ in.
Weight per doz.	[illegible]	7 lbs.
Price,	$ [illegible]	4.75

ALLIGATOR.

Forged Steel, Solid Handle.

Nos.	2	3	4	5
Length,	9	[illegible]	2	27 in.
For [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
For [illegible] in.	[illegible]	[illegible]	[illegible]	2 to 3 in.
Weight,	[illegible]	[illegible]	[illegible]	34
Price,	$ 3.00	24.00	[illegible]	54.00

No. 1 [illegible] in. cast steel, polished, open handle, for ¼ to [illegible] pipe and [illegible] to ¾ in. round iron, wt per doz. 2 lbs. [illegible] per dozen $4.00

EXTRA PARTS FOR STILLSON WRENCHES.

Jaw.

Nut.

Frame.

Inches,	6	8	10	14	18	24
Jaws,	each $0.67	.67	.75	.00	1.33	2.00
Nuts,	.20	.25	.27	.35	.42	.50
Frames,	.25	.25	.30	.45	.55	.65

EXTRA PARTS FOR TRIMO WRENCHES.

Jaw.

Screw.

Inserted Jaw.

Frame.

Inches,	6	8	10	14	18	24	36	[illegible]
Movable Jaws,	each $0.67	.67	.75	1.00	1.33	2.00	4.00	6.00
Nuts,	.20	.20	.27	.35	.42	.50	.65	.80
Inserted Jaws,	.75	.75	.80	.50	.55	.65	1.00	1.25
Frame,	.25	.25	.33	.45	.55	.65	.75	1.00
Springs,	.02	.03	.03	.03	.04	.04	.04	.04
Frame Pins,	.03	.03	.03	.03	.04	.04	.04	.04½
Jaw Pins,	.02	.03	.03	.03	.04	.04	.04	.04½

SETH THOMAS CLOCKS.

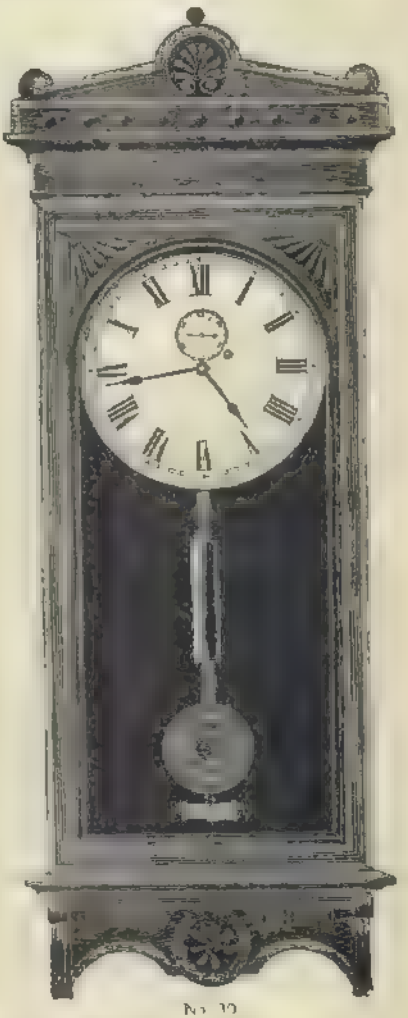
Movement Has Cut Pinions of Solid Steel, Finished Plates
Graham Escapement, Brass Covered Zinc
Ball, Wood Rod

No. 60 Regulator, 8 day, weight time beats seconds, one movement, golden oak or mahogany case, [illegible] dia. 14 in. - - - - each **$110 26**

SETH THOMAS CLOCKS.

No. 31—Regulator, 8 day, weight, time, beats seconds walnut, cherry, oak or old oak 18 in dial Roman or Arabic height 68 in large cut steel pinion movement Graham escapement brass covered zinc ball and wood rod, - - - - - - each $94 50

SETH THOMAS CLOCKS.



No 9

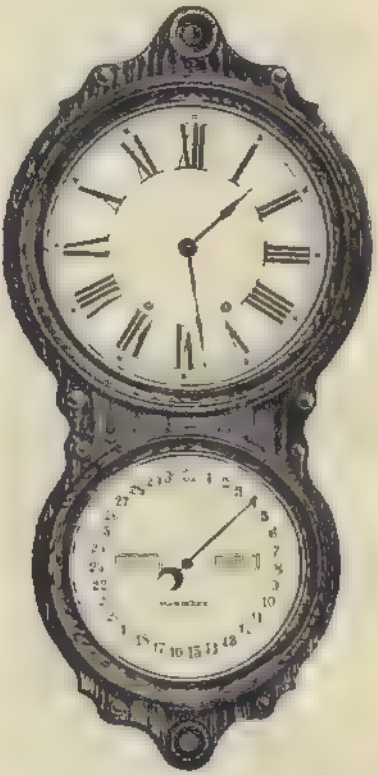
No 30

No 9 Regulator [illegible] walnut, cherry or oak [illegible] each $39 06

No 30 Regulator [illegible] " 44 10

SETH THOMAS CLOCKS.

No. 1071



Nos. 1061 and 1062

No. 1071 -Regulator, 8-day weight, time and strike, oak or cherry case, [illegible] inches high, dial, height [illegible] inches, movement 12 inches, lantern pinions, Graham escapement, brass covered rim wheel and [illegible] inches, movement has retaining power ..... each $22 68

No. 1061 Office calendar, 8-day, spring time and strike, rosewood, walnut or oak veneer [illegible] inches high, [illegible] calendar dial, perpetual calendar, height 32 inches ..... each 23 32

No. 1062 Office calendar, 8-day spring, strike [illegible] otherwise same as No. 1061. [illegible]

SETH THOMAS CLOCKS.

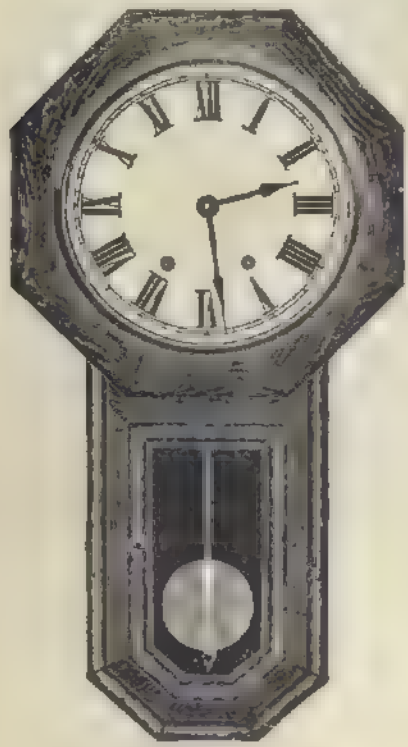
No. 912 [illegible]

[illegible]

[illegible]

No. 913 [illegible]

[illegible]



Nos. [illegible]

Nos. 921 and 922

No. 921 [illegible] each 4.50

No. 922 [illegible]

No. 921, each 16.00

SETH THOMAS RAILROAD CLOCKS.

Walnut, Cherry, Oak or Old Oak Case.

No. 641 -1 [illegible] time
14 in. dial, height 30½ in.
width 20 in., • • each $25 20

No 641.

No. 65[illegible]

Walnut, Cherry, Oak or Old Oak Case.

No. 651 15 day, pendulum, time 18 in. dia.,
height 36 in., width 25 in., • each $33.70

PADLOCKS.

No. 4016. No. 4018. No. 4020. No. 4021. No. 4025.

Self-Locking, Polished Wrought Brass, Lacquered, Spring Shackle, Flat Steel Key.

No. 4016—1 in., 4 changes, weight per dozen ¾ lbs.,	per dozen	$2.80
No. 4018—1¼ in., 5 changes, weight per dozen 1 lb.,	"	3.00
No. 4020—1½ in., 6 changes, weight per dozen 1¼ lbs.,	"	3.60

Self-Locking, Spring Shackle, Flat Steel Key, Four Patent Wards.

No. 4021—1¾ in., Japanned wrought steel case, all alike, weight per dozen 2 ½ lbs.,	per dozen	$2.00
No. 4021½—1¾ in., Japanned wrought steel case, 12 changes, weight per dozen 2½ lbs.,		2.40
No. 4022½—2 in., polished wrought brass, 12 changes, weight per dozen 3 lbs.,		4.80
No. 4025—2 in., Japanned wrought steel case, 12 changes, weight per dozen 3 lbs.,		2.70

ONE DOZEN IN A BOX.

No. 400. No. 300. No. 855.

No. 400—2 in., self-locking, polished wrought brass, lacquered, spring shackle, 2 flat steel keys, 2 changes, 1 master key to each dozen, weight per dozen 1½ lbs., per dozen $4 00
No. 300—2 in., C P D, polished brass case, self-locking, spring shackle, 4 levers, 2 flat steel keys, 50 changes, with master key, weight per dozen 2½ lbs., per dozen 6.50
No. 855—2 in., ebony black steel case, self-locking, spring shackle, flat steel key, weight per dozen 1½ lbs., 1 20

Nos. 400 and 300 are designed for the use of express companies, for delivery service.

ONE DOZEN IN A BOX.

Nos. 832, 880 and 885. No. 800. No. 875.

No. 832—2 in., wrought steel case, brass plated, self-locking, spring shackle, revolving key hub, 2 flat steel keys, weight per dozen 2½ lbs., per dozen $2.25
No. 880—2 in., wrought steel case, ebony black finish, self-locking, bright steel spring shackle, 2 secure levers, revolving key hub, 2 flat steel keys, 3 changes, weight per dozen 2 lbs., per dozen 2.25
No. 885—2 in., lacquered brass shackle, otherwise same as No. 880, " 2.60
No. 800—2½ in., wrought steel case, self-locking, bright steel spring shackle, revolving key hub, 2 secure levers, 2 flat steel keys, 12 changes, weight per dozen 3 lbs., per dozen 4.00
No. 810—2½ in., polished wrought brass, otherwise same as No. 800, " 5.25
No. 875—2 in., polished wrought brass, raised bushing, self-locking, spring shackle, revolving key hub, 2 flat steel keys, 12 changes, weight per dozen 2½ lbs., per dozen 4 00

ONE DOZEN IN A BOX.

PADLOCKS.

Nos. 920 and 925.

No. 920—2 in. brass plated wrought steel case, [illegible] 2 secure levers, brass revolving key [illegible] 2 nickel plated flat steel keys, 12 changes, weight per dozen 4 lbs. ... per dozen $4.00

No. 925 [illegible] secure levers, brass revolving key [illegible] plated flat steel keys, 12 changes, weight per dozen 4½ lbs. ... per dozen 4.50

No. 1905 [illegible] 3 secure levers, brass revolving key [illegible] 24 changes, weight per dozen 4 lbs. ... per dozen 6.00

Nos. 4010, 4[illegible] and 1920.

No. [illegible] 1915.

No. 4010 [illegible] wrought steel case self-locking spring shackle 3 secure levers 7 [illegible] double bitted keys 7 changes, weight per dozen 5 lbs. ... per dozen $5.50

No. 4012 [illegible] wrought steel case self-locking spring shackle [illegible] double bitted keys, weight per dozen 5 lbs. ... per dozen 6.00

No. 1920 3 [illegible] nickel plated wrought steel case self-locking spring shackle [illegible] secure levers [illegible] nickel plated bit [illegible] weight per dozen [illegible] ... per dozen 9.00

No. 1910 3 in. [illegible] black wrought steel case self-locking nickel plated spring shackle [illegible] secure levers [illegible] nickel plated flat steel keys, weight per dozen 4½ lbs. ... per dozen 8.00

No. 1915—3 in., wrought brass case and shackle satin finish, otherwise same as No. 1910, weight per dozen 5 lbs. ... per dozen 10.00

NOS. 4012, 1910 AND 1915 HALF DOZEN NOS. 4012 AND 1920 ONE DOZEN IN A BOX.

No. 1925

No. [illegible] 1945

No. 1925 2 [illegible] wrought steel case self-locking spring shackle 6 secure levers, brass revolving key [illegible] 2 flat steel keys, weight per dozen 6 lbs. ... per dozen $6.00

No. 1945 [illegible] wrought steel case self-locking spring shackle 3 secure levers, double bitted flat steel keys 12 changes, weight per dozen 9 lbs. ... per dozen 8.00

[illegible] DOZEN IN A BOX.

PADLOCKS.

No. [illegible]

[illegible]

No. 1940 2 in. steel case, ivory black finish, self locking, brass plated spring shackle, 6 secure levers, 2 nickel plated flat steel keys, 12 changes, weight per dozen 6 lbs., ... per dozen $16 00

No. 04150 2 in. [illegible] case, self locking spring shackle and drop secure lever, with 2 bronze keys, 1 change, weight per dozen 6 lbs., ... per dozen 10.00

HALF DOZEN IN A BOX.

[illegible]

[illegible]

No. 840 [illegible] finish, self locking, heavy pattern brass [illegible], shackle, brass rivets and tower mechanism, brass revolving key bush, 4 levers, 2 flat steel keys, 24 changes, weight per dozen 9 lbs., ... per dozen $ 1 00

No. 4014 [illegible] case, [illegible] locking polished brass spring shackle, 5 secure levers, revolving key bush, 2 double bitted steel keys, 24 changes, weight per dozen 5 lbs., ... per dozen 2 00

ONE DOZEN IN A BOX.

No. 04151

No. 4 SL.

No. 04151 2½ in. unpolished [illegible] steel locking spring shackle and drop secure levers, and solid 9 in. heavy iron chain, 2 bronze keys, 3 changes, weight per dozen 8 lbs., ... per dozen $12 50

No. 4[illegible] 2 in. [illegible] cast locking shackle and drop, tumbler and ward, 3 in. heavy iron chain, 2 bronze keys, 17 changes, weight per dozen [illegible] . . . . . per dozen 4 00

HALF DOZEN IN A BOX.

PADLOCKS.

No. 877

No. 1108

Nos. 895 and 900.

No. 877—2 in. wrought steel case, brass plated; self locking spring shackle, brass revolving key hub, 2 nickel plated flat steel keys, 14 changes, weight per dozen 3½ lbs. per dozen $3.25

No. 1108—2½ in. wrought steel case, brass plated, self locking spring shackle, brass revolving key hub, 2 nickel plated flat steel keys, 24 changes, weight per dozen 5 lbs. per dozen 3.75

No. 895—2 in. steel case, chemical black finish, self locking polished steel spring shackle, 6 levers, brass inside mechanism and revolving key hub, 2 flat steel keys, interchangeable changes, weight per dozen 4 lbs. per dozen 7.50

No. 900—2 in., brass, otherwise same as No. 895, weight per dozen 4 lbs. 9.50

HALF DOZEN IN A BOX.

No. 214.

No. 221.

Nos. 4402 and 4403.

No. 214—1½ in. polished cast brass, self locking, spring shackle, 2 nickel plated flat steel keys, 6 changes, weight per dozen 2¼ lbs. per dozen, $3.75

No. 221—1¾ in. polished cast brass, self locking, spring shackle, 2 nickel plated flat steel keys, 6 changes, weight per dozen 4 lbs., per dozen, 5.50

No. 4402—2 in. wrought steel case, very black finish, self locking spring shackle, polished 4 levers, revolving key hub, 2 flat steel keys, 300 changes, weight per dozen 3 lbs., per dozen 4.80

No. 4403—2 in., brass, otherwise same as No. 4402, weight per dozen 3 lbs., 6.25

HALF DOZEN IN A BOX.

No. 50.

No. 62.

No. 50—1⅝ in. japanned steel case, ground name; self locking, polished forged spring shackle, 5 levers, brass key hub, 2 corrugated steel keys, innumerable changes, weight per dozen 2½ lbs., per dozen $ 6.50

No. 52—1⅝ in. brass case and inside mechanism, polished bronze shackle, otherwise same as No. 50, weight per dozen 2½ lbs., per dozen, 8.50

No. 60—2 in. japanned steel case, ground name, self locking, polished forged spring shackle, 6 levers, brass key hub, 2 corrugated steel keys, innumerable changes, weight per dozen 4 lbs. per dozen 8.00

No. 62—2 in., brass case and inside mechanism, polished bronze shackle, otherwise same as No. 50, weight per dozen 4 lbs., 11.00

HALF DOZEN IN A BOX.

YALE PADLOCKS.

No. 8[illegible] and 8[illegible] No. 8434 and 8454 Nos. 543 and 555 Nos. [illegible] and [illegible] No. [illegible]

No. 803 [illegible] in. rustless [illegible] self locking bronze [illegible] spring shackle and [illegible] 3 tumblers, 2 [illegible] steel keys, [illegible] angle weight per [illegible] per [illegible] $ 00

No. 805 2 in. 144 [illegible] 4 tumblers, otherwise same as [illegible] Weight per [illegible] 4 00

No. 8434 [illegible] in. rustless [illegible] [illegible] straight steel case self locking [illegible] steel spring [illegible] 3 tumblers, 2 nickel plated flat steel keys, 48 changes, weight per dozen 7½ lbs. per dozen 11.00

No. 8454—2 in., 144 changes, 4 tumblers, otherwise same as No. 8434, weight per dozen 6 lbs. 13 50

No. 543 [illegible] in. rustless [illegible] case self locking steel spring shackle brass side mechanism 2 German silver corrugated keys 36 changes, weight per dozen 3 lbs. per dozen 14.00

No. 853 2 in., 144 changes, 4 tumblers, otherwise same as No. 543, weight per dozen 4 lbs 17 50

No. A43 [illegible] in. [illegible] metal case self locking, steel spring shackle, brass inside mechanism, 3 tumblers, 2 German silver [illegible] plated keys, 36 changes, weight per dozen 3 lbs., per [illegible] 13 50

No. A53 2 in. 144 changes, 4 tumblers, otherwise same as No. 543, weight per dozen 4 lbs. 19 00

No. 850 2 in. [illegible] case [illegible] locking bronze metal spring shackle and inside [illegible] 5 tumblers, 2 [illegible] steel unlimited changes, weight per dozen 9 lbs., per dozen 40.00

HALF DOZEN IN A BOX.

Polished Cast Bronze Metal, Self Locking, Spring Shackle.

No. 8[illegible]3 [illegible] in. 3 brass tumblers, 2 nickel plated flat steel keys, 54 changes, weight per dozen 2 lbs., per dozen $17 00

No. 833 [illegible] in. 3 brass tumblers, 2 nickel plated flat steel keys, 48 changes, weight per dozen 4 lbs., 22 00

No. 853 2 in. 4 brass tumblers, 2 nickel plated flat steel keys, 144 changes, weight per dozen 7 lbs., 28 00

No. 863 2½ in. 4 brass tumblers, 2 nickel plated flat steel keys, 144 changes, weight per dozen 8¾ lbs., 35.00

No. 873 2½ in. 4 brass tumblers, 2 nickel plated flat steel keys, 144 changes, weight per dozen 10 lbs., 42.00

HALF DOZEN IN A BOX.

No. 8005—[illegible] rustless iron case self locking bronze metal spring shackle and inside mechanism, 4 [illegible] steel keys with [illegible] in. galvanized iron chain, 144 changes, weight per dozen 9 lbs., per dozen $ 7 25

No. 8053 2 in. polished cast bronze metal case self locking spring shackle, 4 brass tumblers, 2 nickel plated flat steel keys, with [illegible] in. chain, 144 changes, weight per dozen 5 lbs., per dozen 32.00

No. 8063—2½ in., otherwise same as No. 8053, weight per dozen 9½ lbs., 39 00

No. 8050 2 in. rustless iron case, [illegible] locking bronze [illegible] spring shackle and inside mechanism, 5 tumblers, 2 flat steel keys, with 9 in. galvanized iron chain, unlimited changes, weight per dozen 10½ lbs., per dozen 46 00

HALF DOZEN IN A BOX.

PADLOCKS.

No. XSL. No. 45. No. 64. No. 52 4. Star.

No. 3052—2½ in. solid iron japanned case, polished malleable iron hasp secured, wrought iron tumblers 2 nickel plated flat steel keys 12 changes, weight per dozen 9 lbs., per dozen $ 8.80

No. 5214— in. STAR, extra large solid iron japanned case polished loose shackle 5 tumblers, 2 iron keys, weight per dozen 44 lbs. per dozen. 12.00

No. 3053— in. solid iron japanned case malleable iron hasp, secured, wrought iron tumblers 2 nickel plated flat steel keys with japanned iron cha 2 changes, weight per dozen 7 lbs. per dozen 7.60

No. 3054— 2¼ in. otherwise same as No. 3053 weight per dozen 10 lbs. 10.80

HALF DOZEN IN A BOX.

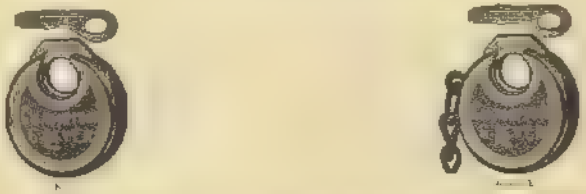
No. 700. No. 79.

No. 700 2⅛ in., GIANT government pattern, polished brass self locking spring shackle 2 nickel plated flat steel keys, unlimited changes, weight per dozen 4½ lbs., per dozen $12.50

No. 79 2¼ in., cast brass, self locking, spring shackle, spring strap 2 brass keys with chain, 12 changes, weight per doze lbs., per dozen, 12.00

No. 89 2 in., rench nick, rough cast brass, otherwise same as No. 79 weight per dozen 7 lbs., per dozen 16.00

HALF DOZEN IN A BOX.

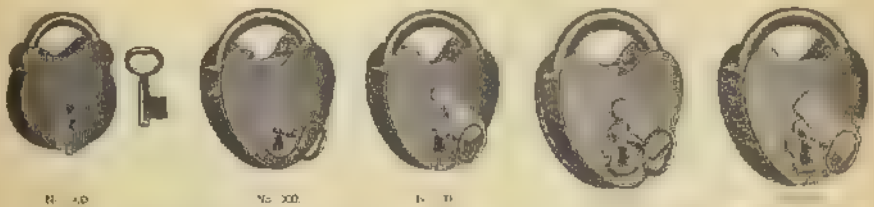


No. 1 1¾ in. CHAMPION polished cast bronze metal, self locking 5 tumbler, brass inside working parts, phosphor bronze shackle, 2 nickel plated steel keys 2 changes, weight per dozen 6 lbs. per dozen $ 25

No. 10— 2 in. CHAMPION with hinged steel shackle otherwise same as No. 1 weight per dozen 7 lbs., 4.00

HALF DOZEN IN A BOX.

WROUGHT STEEL PADLOCKS.



No. 000 No. 00 No. 0 No.

No. 0000 2 in. Japanned case, self-locking, spring shackle, weight per dozen 2 lbs., per doz.
No. 000 2 in. Japanned case, raised bushing, without drop, weight per dozen 3½ lbs.,
No. 00 2 in. Japanned case, brass drop, weight per dozen 3½ lbs.,
No. 0 2 in. Japanned case, brass drop and bushing,
No. 1 2 Japanned case, brass drop and bushing,

MADE WITH AND WITHOUT BRASS BOTTOM IN A BOX.

No. 6. No. 7. No. 3000.

No. 5 in. Japanned case, brass box and bushing, weight 2 lbs. with two keys, weights 4 keys, weight per 2 dozen 7 lbs. per dozen 5.66

No. 7 in. Japanned case, brass drop and bushing, weight 3 lbs. and bridge with hinges, weight per dozen 9 lbs. per dozen 10.00

No. 3001 in. brass bushing, fancy engraved with polishing key hub and fancy ward, 2 steel keys, fancy weight about 4 lbs. per

No. 3000 No. 3020

No. 1001 2 Japanned, fancy engraved drop plate, rotating key hub and fancy ward, 2 nickel steel keys, 2 1.75
No. 3017 2½ in. japanned case, brass drop and bushing, patent locking key and 2 nickel keys, 4 hoops, weight per dozen 5½ lbs. per dozen 7.70
No. 3026—2½ in. japanned case, fancy brass bushed, double chamber key, 3 die filed steel keys, 17 hoops, weight per dozen 7 lbs. per dozen 9.20
No. 3027—2½ in. japanned case, fancy brass bushed double chamber key, 3 die filed steel keys, 4 hoops, weight per dozen 5 lbs. per dozen 7.95

HALF DOZEN IN A BOX.

WROUGHT STEEL PADLOCKS.

No. 13.

No. 14.

No. 3016.

No. 13—2 in. japanned case, extra fine 3 tumblers, self locking, spring drop, made double action, extra case with chain, 2 keys, 2 changes, weight per dozen 2½ lbs. . . . . per dozen $ 9.25

No. 14—2 in. japanned case extra fine brass drop and bushing spring shackle with chain, 1 key 5 changes weight per dozen 8 lbs. . . . . per dozen 8.35

No. 3016—2½ in. japanned case brass bushing fancy engraved drop patent rotating key hub, 2 flat steel keys, with chain, 2 changes weight per dozen 7 lbs. . . . . per dozen 0.20

HALF DOZEN IN A BOX

No. 3029.

No. 3065.

No. 3066

No. 3029—2½ in. japanned case, extra fine, fancy engraved drop brass bushed, 3 tumblers, spring shackle, bridge wards with 2 keys, 12 changes, weight per dozen 9 lbs. . . . . per dozen $ 6.50

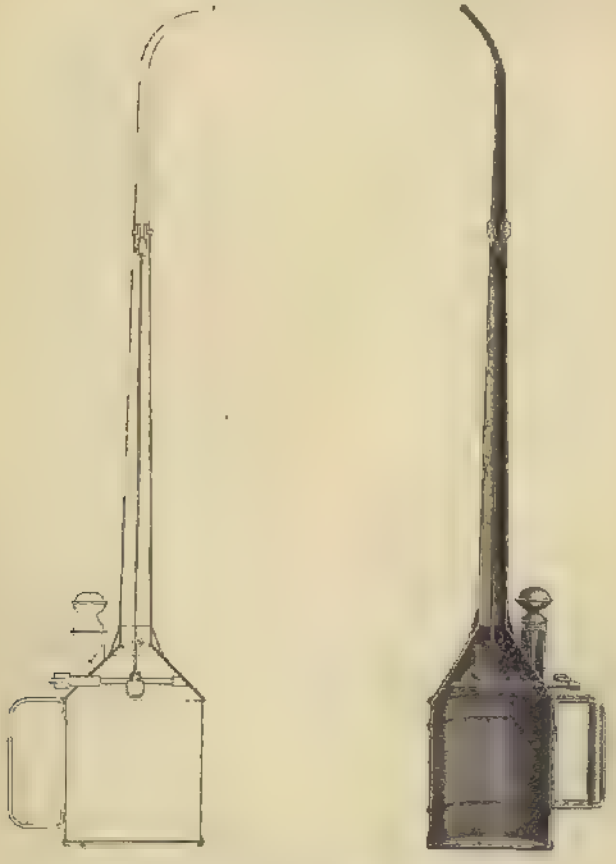
No. 3065—2½ in. japanned case, brass drop and bushing wide wire flat spring shackle with chain, 2 changes, weight per dozen 8½ lbs. . . . . per dozen 0.75

No. 3066—2½ in. japanned case brass bushed, double chain, key padlock, spring shackle, revolving key pin, with chain, double bitted steel key, 2 changes, weight per dozen 5 lbs. . . . . per dozen 8.75

HALF DOZEN IN A BOX

RAILROAD TINWARE.

LOCOMOTIVE OILERS.



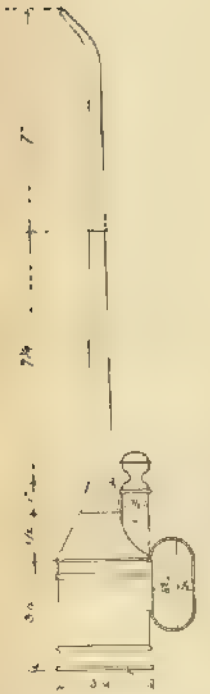
Nos. 571 to 573. Showing Interior and Side View of Oiler

IXXX Charcoal Tin, Wire Incased Bottom

No. 571	1 pt., 18 in. spout, 24 in. overall, screw tip, brass union	per dozen $12 00
No. 572—	2 pt., 20 in. spout, 29 in. overall, screw tip, brass union	13 00
No. 573—	3 pt., 24 in. spout, 30 in. overall, screw tip, brass union	14 00

The above can be furnished with solid spouts.

RAILROAD TINWARE.



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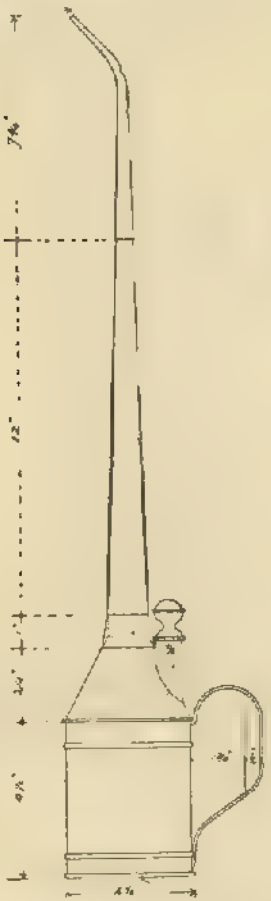

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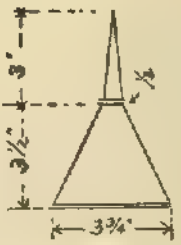
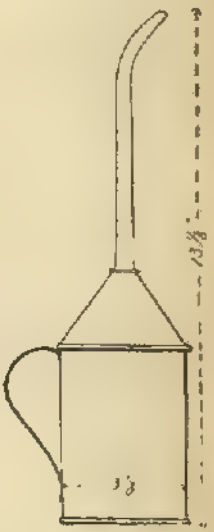


No. 527.

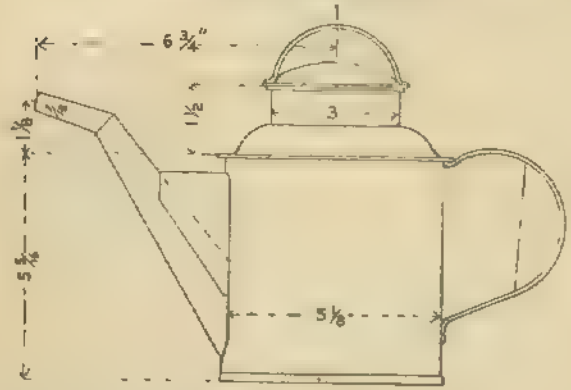


No 500

No 503	Oiler, 1 pt , IXXX charcoal tin 14 in spout, 19 in over all, - - - -	per dozen $8.00
No 505	Oiler, 1 qt , IXXX charcoal tin, 20 in. spout, 27 in over all. - - - -	" 9.00
No. 527	Squirt locomotive oiler, ½ pt., IXXX charcoal tin spring bottom, - - - -	" 3.00
No 500	Hand car oiler, 1 pt , IX charcoal tin, 7 in. spout, 13 in over all., - - - -	" 7.00

RAILROAD TINWARE.

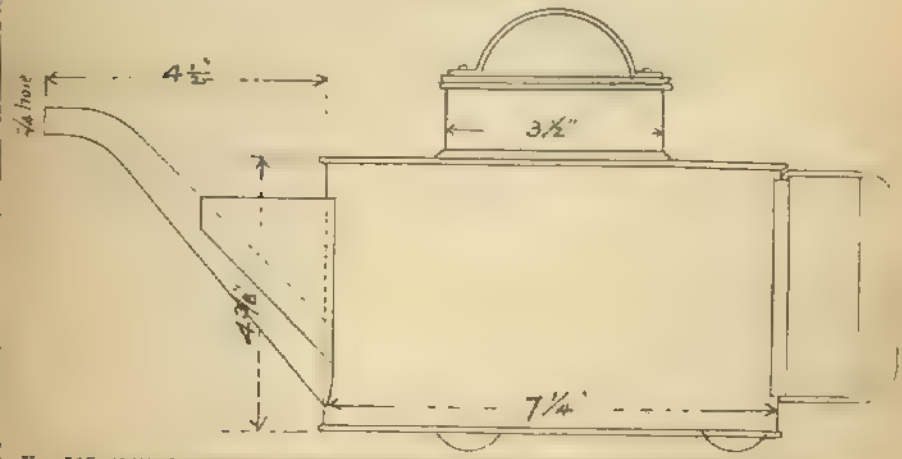
ROUND TALLOW POTS.



No 590

No. 589 1 qt., IXXX Charcoal tin, wired bottom, ... per dozen $ 8 00
No. 590 2 qt. IXXX Charcoal tin, wired bottom, ... " 10 00

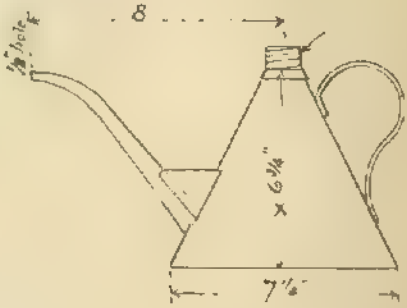
VALVE OILERS.



No 507 IXXX Coal oil can, wired top and bottom, No. 18 mesh, wire strainer over bottom of spout per dozen, ... $ 2 00
No 5071 Removable cup strainer, otherwise same as No. 507 per dozen 5 50

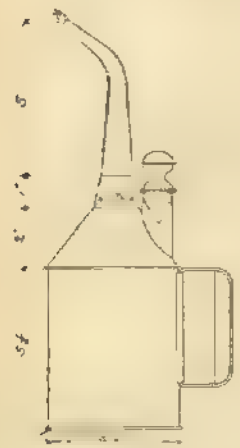
RAILROAD TINWARE.

No. 533

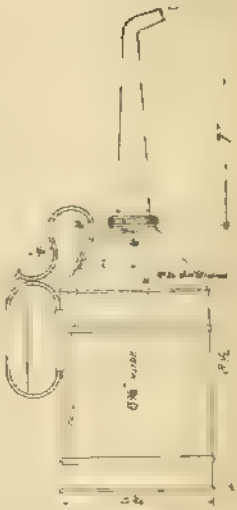


No. 551

No. 533—Tripoli box, IXXX charcoal tin, wired bottom. per dozen $2.70
No. 551—Lamp filler, IXXX charcoal tin, screw cap top. 2.40



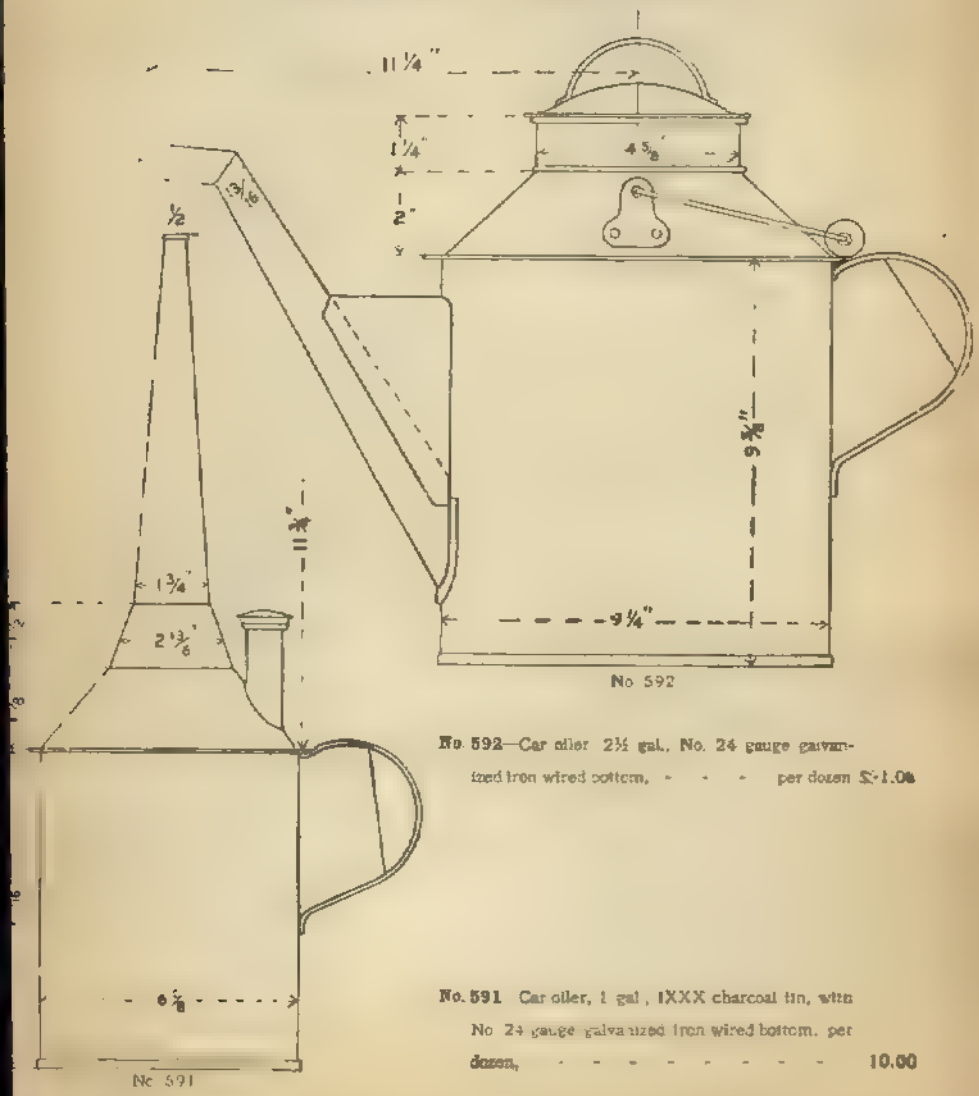
No. 552



No. 502

No. 552 Insecticide sprayer, 1 qt., IXXX charcoal tin, per dozen $ 8.40
No. 502 Vaseline oiler, 1 qt. IXXX charcoal tin, screw spout 12.00

RAILROAD TINWARE.

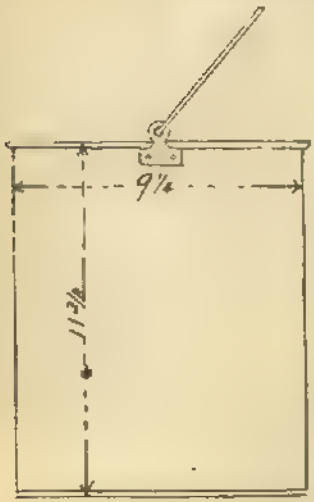


No. 592—Car oiler 2½ gal., No. 24 gauge galvanized iron wired bottom, - - - - per dozen $ 1.08

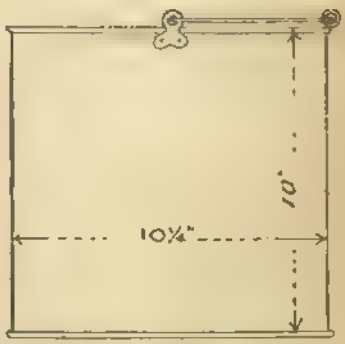
No. 591 Car oiler, 1 gal., IXXX charcoal tin, with No 24 gauge galvanized iron wired bottom, per dozen, - - - - - - - - - - 10.00

RAILROAD TINWARE.

BUCKETS.

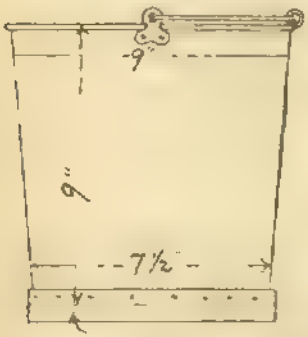


No. 547

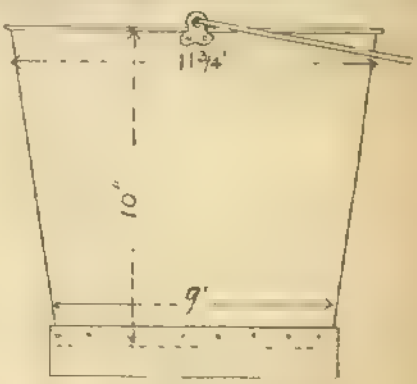


No. 520

No. 547 Engine, No. 24 gauge galvanized iron, wired top and bottom, ... per dozen $ 9 00
No. 520 Water, 20 qt. No. 24 gauge galvanized iron, double seamed and wired top and bottom. 11 00



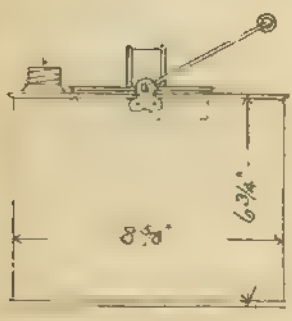
No. 519



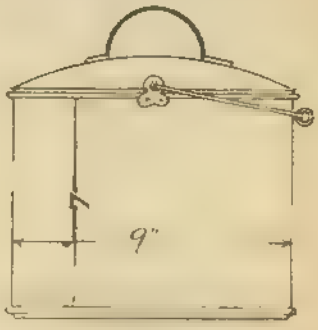
No. 521

No. 519 Tank, 15 qt. No. 24 gauge galvanized iron, double seamed bottom, with riveted No. 18 galvanized iron drop wire . . . . . per dozen $10 00
No. 521 Water, 15 qt. No. 24 gauge galvanized iron, double seamed bottom, with riveted No. 10 galvanized iron handle wire . . . . . per dozen 11 00
No. 522 Water, 20 qt. otherwise same as No. 52. . . . . 21 00

RAILROAD TINWARE.



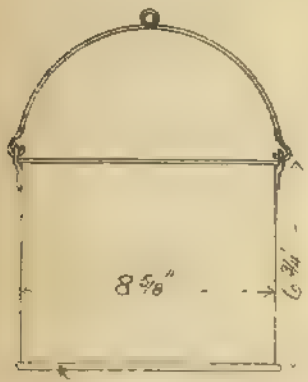
No. 517.



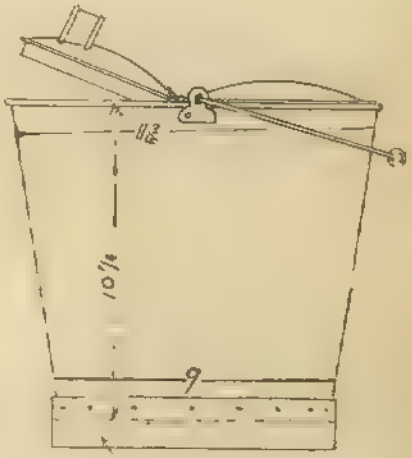
No. 518.

No. 517 – Tallow holder, IXXX tinned iron, double seamed bottom, wired covered top, with ¾ in tin screw cap, ... per dozen $10 00

No. 518 Tallow bucket, No. 24 gauge galvanized iron, double seamed bottom, wired, can be furnished without cover, ... per dozen 9 00



No. 524.



No. 594

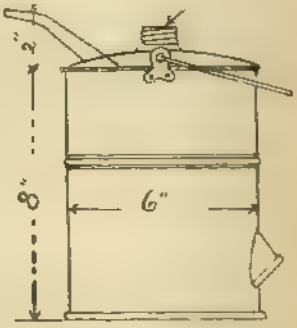
No. 524 Pail bucket, No. 24 gauge galvanized iron, double seamed bottom, wired, per dozen $ 8 00

No. 594 Dipper pail, No. 24 galvanized iron, double seamed bottom, No. 18 galvanized iron covered galvanized iron band, covered top, hinged lid, ... per dozen 14 00

RAILROAD TINWARE.

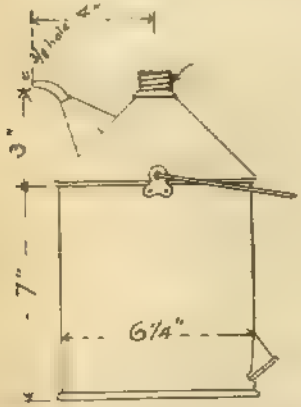
OIL CANS

No. 508.

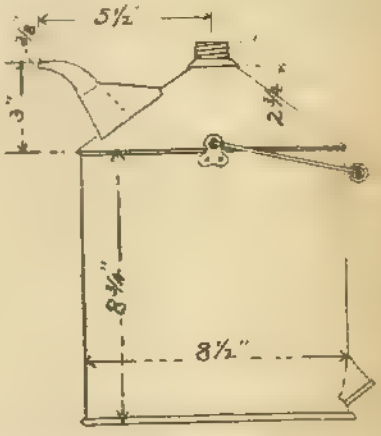


No. 549.

No 508 -½ gal IXXX charcoal tin, wire incased bottom, ... per doz. $7.00
No 549— 1 gal., IXXX charcoal tin, wired bottom. 1 in. screw top, ... 9.50



No. 510

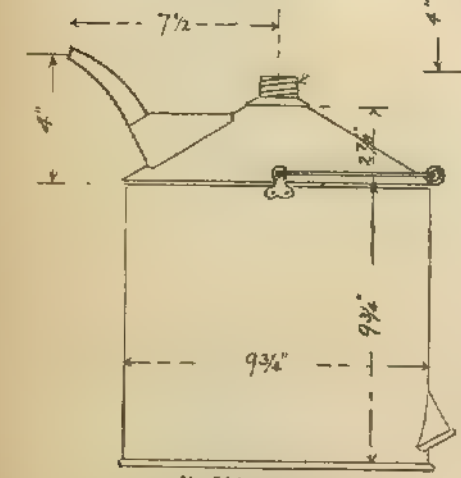


No. 512

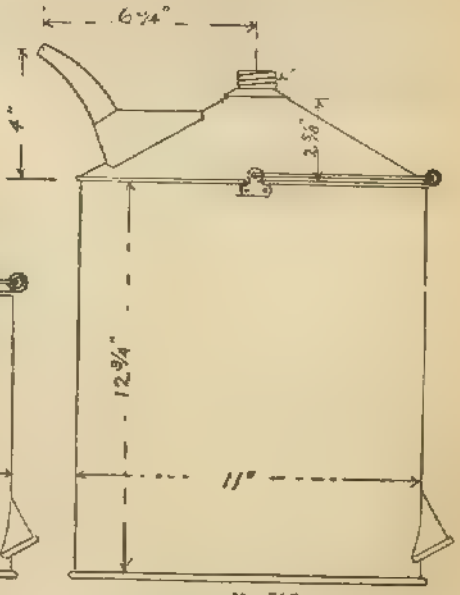
No 510 1 gal. XXX charcoal tin, double seamed, bottom wired 1 in. screw top, . . . per doz. $ 8.00
No 601 1 gal. No. 24 gauge galvanized iron, with spout, otherwise same as No. 510, . . . 9.00
No 512 2 gal. IXXX charcoal tin, double seamed, bottom wired ½ in. screw top, . . . 8.00
No 602 2 gal. No. 24 gauge galvanized iron, with spout, otherwise same as No. 512, . . . 10.

RAILROAD TINWARE.

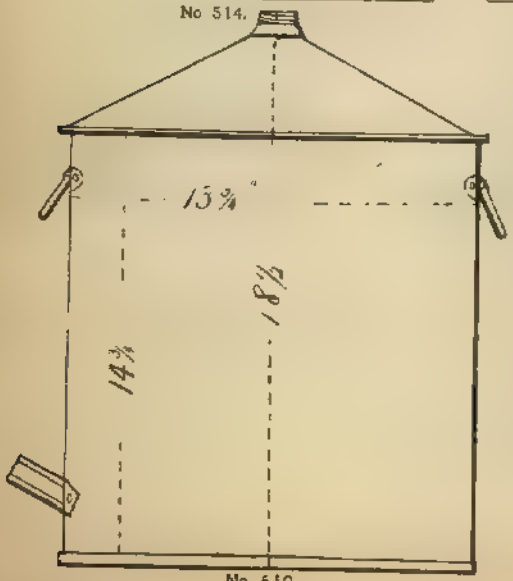
OIL CANS.



No 514.



No. 515.



No 610

No. 514—3 gal., IXXX charcoal tin, double seamed bottom, wired 1¾ in. screw top, - per dozen $12 50

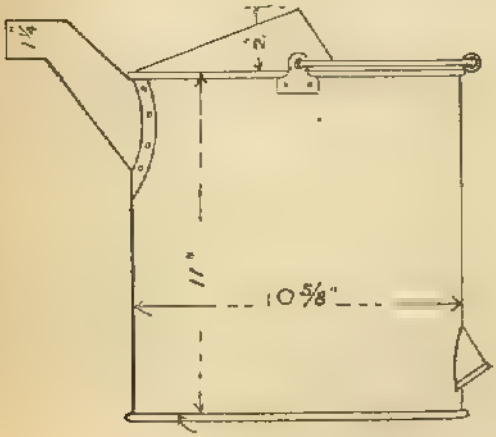
No. 515—5 gal., IXXX charcoal tin, double seamed bottom, wired, 1¾ in screw top, - per dozen 20 00

No 805—5 gal No. 24 gauge galvanized iron without spout, otherwise same No. 515, - per dozen 19 00

No. 610—10 gal., No. 24 gauge galvanized iron, side handles, double seamed bottom, wired 1¾ in screw top, - - per dozen 25 00

On No. 610, bail will be substituted for side handles if desired

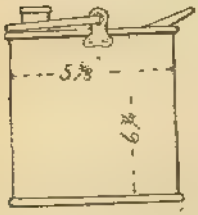
RAILROAD TINWARE.



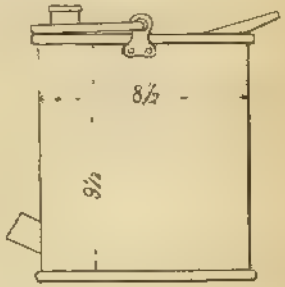
No. 523.

No. 525

No. 523—Water can, No. 24 gauge galvanized iron double seamed bottom, wired top and bottom, riveted bent spout, - - - - - - - - - - - - - - - - per dozen $14 00
No. 525—Fire, coach or tender bucket No. 26 gauge galvanized iron, wired top and bottom, " 9 00



No. 621.

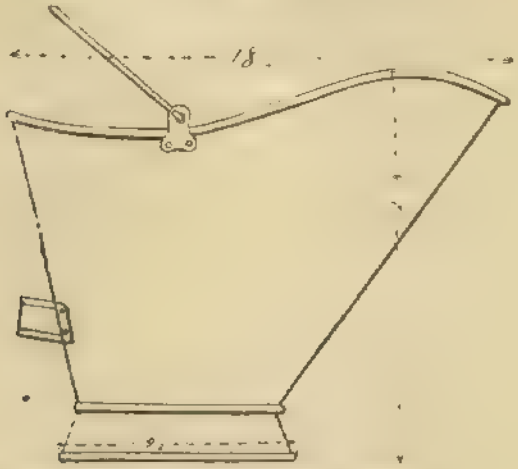


No. 622.

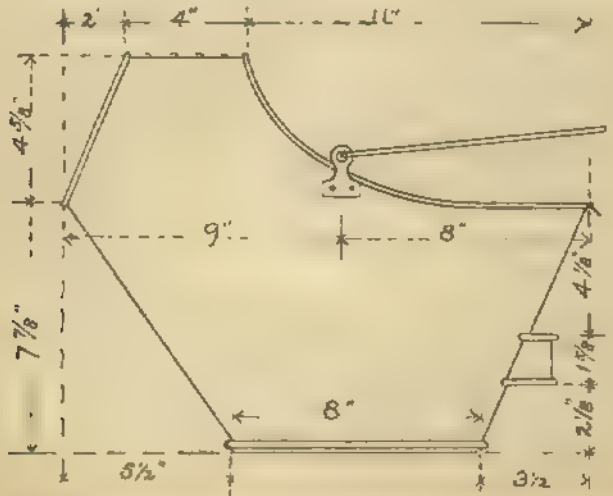
No. 621—1 gal., XXX charcoal tin flat top, bailed spout oil can, - - - - - - per doren $ 9.00
No. 622—2 gal., XXX charcoal tin flat top, bailed spout oil can, - - - - - - " 12 00

RAILROAD TINWARE.

HODS.



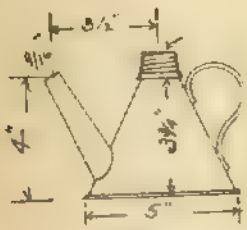
No 627 Coal Hod No 22 gauge galvanized iron double seamed bottom . . . per dozen [illegible]



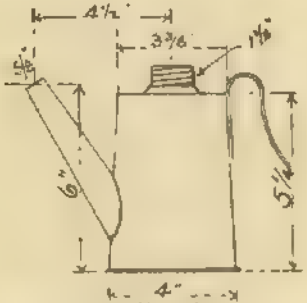
No 566 Funnel sand No 22 gauge galvanized iron double seamed, bottom, wired bottom, for an [illegible] . . . . . per dozen $25.00

RAILROAD TINWARE.

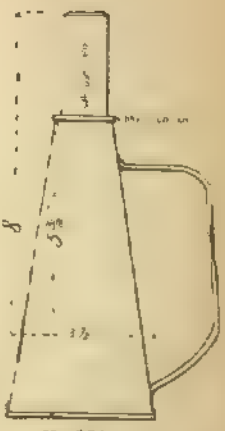
TORCHES.



No 528.



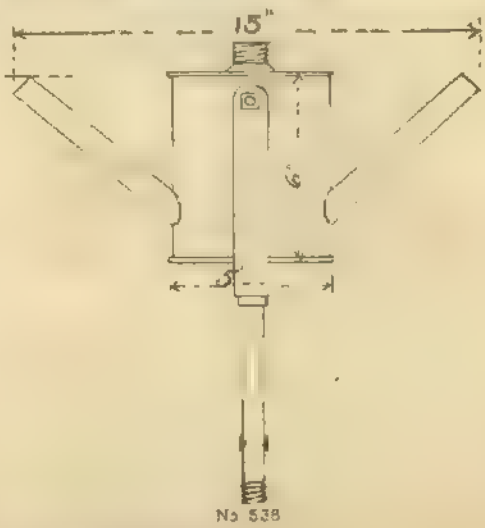
No 529.



No. 531

No 528	Hand, IXXX charcoal tin, wired bottom, [illegible] tin screw top,	per dozen $6 00
No 529	Tubular, IXXX charcoal tin, wired bottom, wire hanging hook,	8 00
No 530	Wipers', with loop handle, body like No. 529,	7 00
No 531	Handle engine, IXXX charcoal tin, wrought pipe wick tube, cast brass union,	3 00

No 537



No 538

No 541

No 537	Engineers', IXXX charcoal tin, wired bottom,	per dozen $10 00
No 538	Wrecking or car lamp, IXXX charcoal tin, wired bottom, 2 straight spouts,	[illegible]
No 541	Inspectors', IXXX charcoal tin, lead filled bottom,	18 00

Ladies' 6 Size Watch Works or Movements.

Stem winding and stem setting. We fit all cases to movements and regulate watches (no charge) before shipping.

Prices quoted on this page are for the Works or Movements only. For Cases to fit any of the Movements shown on this page, see pages 47 to 54, inclusive for Nos. 8942 to 9068, inclusive. Add the price of the Case wanted to that of the Movement desired, which will give you the price of the Complete Watch. When ordering Watches simply quote the number of Movement and Case wanted.

New York Standard Movement.

Gilt or damaskeened nickel, 7 jewels, train bearings in metal settings, quick train, superior white glass enamel dial.

No. 9514 Hunting style $6 00
No. 9515 Open Face style . 6 00

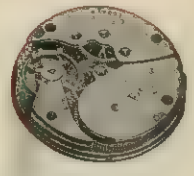
Trenton Movement.

New bridge model, 7 jewels, nickel damaskeened, cut expansion balance, safety pinion, screw bankings, straight line lever escapement, hardened and tempered Breguet hairspring, quick train, exposed winding wheels, handsome white enamed dial, with depressed seconds and red marginal figures.
No. 9516 Hunting style $6 70
No. 9517 Open Face style.. ..... 6 70

Seth Thomas Century Movement.

Nickel, damaskeened, ¾ plate, 7 jewels, plain balance, hard enameled dial, lever set.

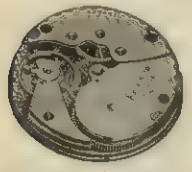
No. 9518 Hunting style only.....$6 00



Excelsior Movement.

Nickel damaskeened, 7 jewels, cut expansion balance, Breguet hairspring, white enamel dial.

No. 9519 Hunting style. .. . $6 70
No. 9520 Open Face style.. . .. 6 70



Excelsior Movement.

Nickel damaskeened, 11 jewels, cut expansion balance, Breguet hairspring, white enamel dial.

No. 9521 Hunting style.. .. $8 00
No. 9522 Open Face style 8 00

Elgin Movement.

Gilded, 7 jewels, exposed pallets, cut expansion balance, Breguet hairspring, polished regulator, sunk second dial.

No. 9523 Hunting style.....$11 90
No. 9524 Open Face style..... 11 90

Waltham Movement.

Gilded, 7 jewels, exposed pallets, cut expansion balance, patent Breguet hairspring, hardened and tempered in form, tempered steel safety barrel.

No. 9525 Hunting style $11 90
No. 9526 Open Face style..... 11 90

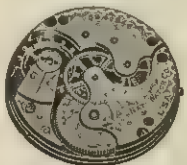
Trenton Movement.

New bridge model, 15 jewels, nickel damaskeened, cut expansion balance, screw bankings, straight line lever escapement, hardened and tempered Breguet hairspring, quick train, exposed winding wheels, handsome white enamel dial, with depressed second and red marginal figures.
No. 9527 Hunting style only...$10 80

Dueber-Hampden Movement.

Gilt, 7 jewels, expansion balance, patent center pinion, sunk second dial, spade hands, elegantly engraved, and regular "Hampden" mainspring.

No. 9528 Hunting style only $10 80



Elgin Movement.

Nickel, 7 jewels, quick train, straight line escapement, exposed pallets, cut expansion balance, Breguet hairspring, polished steel regulator, damaskeened plates, sunk second dial.

No. 9529 Hunting style $13 40
No. 9530 Open Face style 13 40

Waltham Movement.

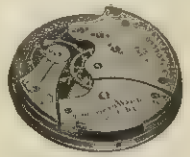
Nickel, 7 jewels, exposed pallets, compensation balance, patent Breguet hairspring hardened and tempered in form, tempered steel safety barrel.

No. 9531 Hunting style $13 40
No. 9532 Open Face style 13 40

Elgin Movement.

Nickel, 15 jewels, settings, quick train, straight line escapement, exposed pallets, cut expansion balance, Breguet hairspring, polished steel regulator, damaskeened plates, sunk second dial.

No. 9534 Hunting style.....$16 40
No. 9535 Open Face style..... 16 40



Waltham Movement.

Nickel, 15 jewels, settings, exposed pallets, cut expansion balance, patent Breguet hairspring hardened and tempered in form, tempered steel safety barrel

No. 9536 Hunting style. . $16 40
No. 9537 Open Face style..... 16 40

Dueber-Hampden Movement.

Nickel, 15 jewels elegantly engraved and damaskeened, bright bevel screws, patent center pinion, morning glory hands, composition jewel settings, "The Hampden" mainspring and accurately timed.

No. 9538 Hunting style only....$14 40

Lady Waltham Movement.

Nickel, 16 ruby jewels, settings, exposed pallets, patent micrometric regulator, compensation balance, adjusted to temperature, patent Breguet hairspring, hardened and tempered in form, tempered steel safety barrel.

No. 9539 Hunting style ...$23 85
No. 9540 Open Face style . 23 85

We guarantee all our Movements for the following years: 7 jewels, 2 years; 11 jewels, 4 years; 15 jewels, 6 years; 16 jewels, 7 years; 17 jewels, 8 years; 19 jewels and over, 10 years.

The above prices are subject to the regular discount.

GENTLEMEN'S 12 SIZE WATCH WORKS OR MOVEMENTS.

Stem winding and stem setting. We fit all cases to movements and regulate watches (no charge) before shipping.

Prices quoted on this page are for the Works or Movements only. For Cases to fit any of the Movements shown on this page, see pages 37 to 45, inclusive (or Nos. 8785 to 8920, inclusive). Add the price of the Case wanted to that of the Movement desired, which will give you the price of the Complete Watch. When ordering Watches simply quote the number of Movement and Case wanted.

Trenton Movement.

7 jewels, nickel damaskeened, cut expansion balance, safety pinions, screw bankings, straight line lever escapement, hardened and tempered Breguet hairspring, quick train, exposed winding wheels, handsome white enamel dial with depressed second and red marginal figures. Open Face furnished without seconds hand.

No. 9490 Hunting style $8 00
No. 9491 Open Face style . 8 00

Elgin Movement.

Nickel, 7 jewels, quick train, straight line escapement, exposed pallets, compensation balance, Breguet hairspring, polished steel regulator, display winding work, patent recoiling click, sunk second glass enamel dial, dust ring, damaskeened plates.

No. 9492 Hunting style $14 90
No. 9493 Open Face style 14 90

Waltham Movement.

7 jewels, exposed pallets, cut expansion balance, patent Breguet hairspring, hardened and tempered in form, tempered steel safety barrel, exposed winding wheels

No. 9494 Hunting style.....$14 90
No. 9495 Open Face style. 14 90

Elgin Movement.

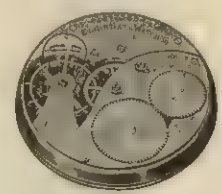
Nickel 15 jewels, 4 pairs settings, compensation balance Breguet hairspring, exposed pallets, micrometric regulator, gold center wheel, patent safety barrel with spring box rigidly mounted on a bridge display winding work patent recoiling click, patent self locking setting device glass enamel dial, dust ring, damaskeened plates.

No. 9496 Hunting style . $20 85
No. 9497 Open Face style... . 20 85

Waltham Movement.

15 jewels, settings, exposed pallets, patent micrometric regulator, cut expansion balance, patent Breguet hairspring hardened and tempered in form, tempered steel safety barrel, exposed winding wheels.

No. 9498 Hunting style .. $20 85
No. 9499 Open Face style 20 85



Elgin Movement.

Nickel, 17 jewels (settings), exposed pallets, cut expansion balance, Breguet hairspring, micrometric regulator, exposed winding wheels, patent recoiling click, patent self-locking device, sunk second dial, dust ring, damaskeened plates.

No. 9500 Hunting style. . $26 80
No. 9501 Open Face style. . 26 80

Waltham Movement.

17 jewels, ¾ plate, red gilded settings, exposed pallets, cut expansion balance, patent Breguet hairspring hardened and tempered in form, patent micrometric regulator, tempered steel safety barrel, exposed winding wheels, red gilded center wheel.

No. 9502 Hunting style . $26 80
No. 9503 Open Face style . 26 80

Elgin Movement.

Nickel, 17 jewels (raised gilded settings), adjusted to temperature, quick train with gold center wheel, straight line escapement, exposed pallets, compensating balance, Breguet hairspring, micrometric regulator, display winding work, patent recoiling click, patent self-locking setting device, sunk second glass enamel dial, dust ring, damaskeened plates.

No. 9504 Hunting style..... $40 95
No. 9505 Open Face style 40 95

Waltham Royal Movement.

17 jewels, settings, exposed pallets, patent micrometric regulator, compensation balance, adjusted to temperature, patent Breguet hairspring hardened and tempered in form, tempered steel safety barrel, exposed winding wheels,

No. 9506 Hunting style.....$40 95
No. 9507 Open Face style..... 40 95

Waltham Riverside Movement

19 fine ruby jewels, gold settings, double roller escapement, exposed pallets, patent micrometric regulator, compensation balance, adjusted to temperature and three positions, patent Breguet hairspring hardened and tempered in form, tempered steel safety barrel, exposed winding wheels.

No. 9508 Hunting style. $61 05
No. 9509 Open Face style. 61 05

Elgin Movement.

Nickel, 23 extra fine ruby jewels (raised gold settings), adjusted to temperature, isochronism and positions, steel escape wheel, pallet arbor and escape pinion cone-pivoted and cap-jeweled, exposed pallets, compensating balance, Breguet hairspring, micrometric regulator, patent safety barrel with spring box rigidly mounted on bridge, barrel arbor pivots running in jewels, display winding work, patent recoiling click, patent self-locking setting device, sunk second glass enamel dial, dust ring, plates beautifully damaskeened, closely timed and finely finished throughout,

No. 9510 Hunting style $148 90
No. 9511 Open Face style 148 90

Waltham Riverside Maximus Movement.

Nickel, 21 diamond and ruby jewels, 2 pairs diamond caps, both balance pivots running on diamonds, raised gold settings, gold train, jewel pin set without shellac, double roller escapement, exposed pallets, patent micrometric regulator, compensation balance, accurately adjusted to temperature, isochronism and positions and carefully timed, patent Breguet hairspring hardened and tempered in form, fine glass hand-painted dial of most modern and artistic design.

No. 9512 Hunting style.. .... $148 90
No. 9513 Open Face style 148 90

We guarantee all our Movements for the following years: 7 jewels, 2 years; 11 jewels, 4 years; 15 jewels, 6 years; 16 jewels, 7 years; 17 jewels, 8 years; 19 jewels and over, 10 years.

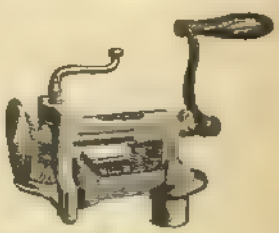
The above prices are subject to the regular discount.

TINNERS' MACHINES.

COLUMBIAN WIRING

With Standard, w't 33 lbs., - - - - each $12 00

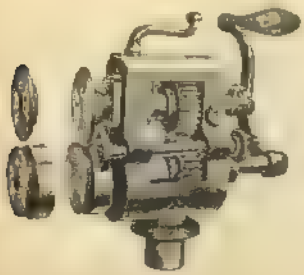
COLUMBIAN SETTING DOWN.



With Standard, w't lbs. - each $9 75

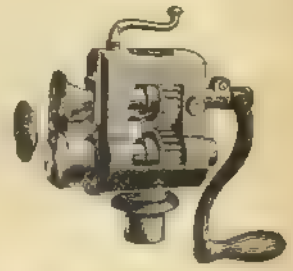
COLUMBIAN TURNING

With Extra Upper and Lower Face.
Small, with standard, w't 26 lbs., - - - each $10 00

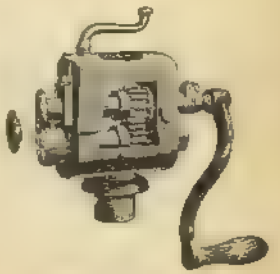


With Extra Upper and Lower Face.
Large, with standard, w't 32 lbs., - - - each $10.25

COLUMBIAN BURRING.



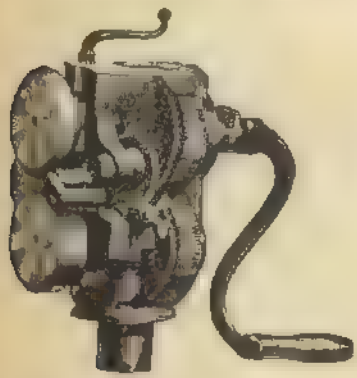
With Extra Upper Face.
Small, with standard, w't 22 lbs. - each $8.50



With Extra Upper Face.
Large, with standard, w't 25 lbs each $9 00

TINNERS' MACHINES.

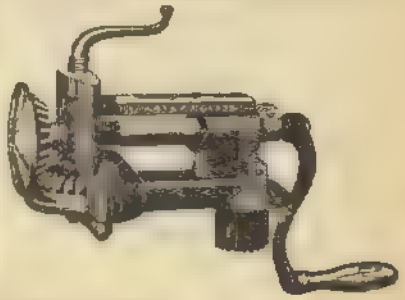
STOW'S ENCASED WIRING.



With Adjustable Boxes and Duplicate Parts.

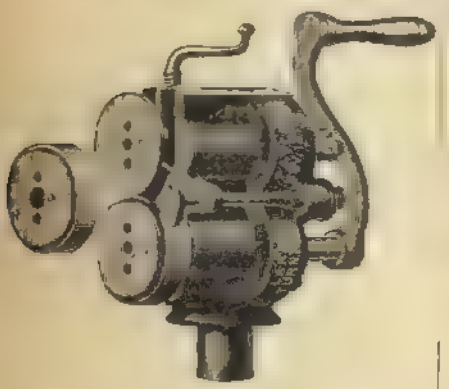
With Standard, w't 30 lbs.	each	$ 4.00
Without Standard, w't 8 lbs.	"	13.25

STOW'S ENCASED SETTING DOWN.



With Standard, w't [illegible] lbs.	each	$9.75
Without Standard, w't [illegible] lbs.	"	4.00

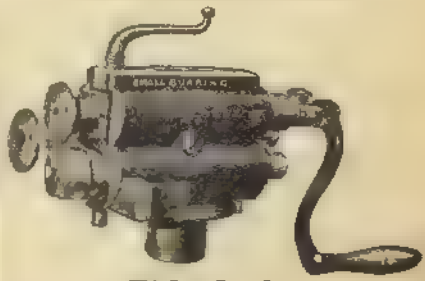
STOW'S ENCASED TURNING



With Extra Faces, Adjustable Boxes and Duplicate Parts.

Small, with standard, w't [illegible] lbs.	each	$[illegible]
Small, without standard, w't 13½ lbs.	"	[illegible]
Large, with standard, w't 79 lbs.	"	[illegible]
Large, without standard, w't 8 lbs.	"	10.75

STOW'S ENCASED BURRING.



With Extra Upper Face.

Small, with standard, w't 21 lbs.	ea.	$ 9.00
Small, without standard, w't 10½ lbs.	"	9.25
Large, with standard, w't 34 lbs.	"	10.50
Large, without standard w't 13 lbs.	"	9.75

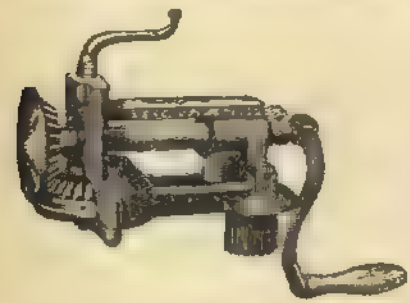
STOW'S IMPROVED MACHINE STANDARDS.

Improved Machine Standards, w't 11 lbs. each $1.00

[illegible] Machine Standards are also adapted to Improved Machines.

TINNERS' MACHINES.

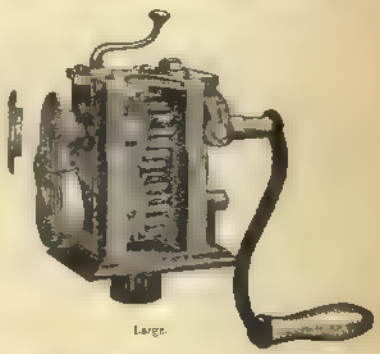
RAYMOND'S PATENT SETTING DOWN.



With Adjustable Boxes.

With Standard, w't 20 lbs., each $0.00
Without Standard, w't 9½ lbs., 0.00

RAYMOND'S PATENT BURRING.



Large.

With Extra Upper Face.

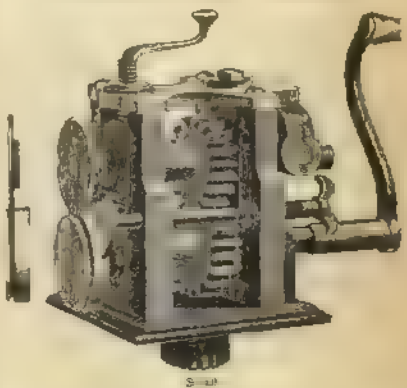
Small, with standard, w't 20 lbs., each $5.50
Small, without standard, w't 9 lbs., 5
Large, with standard, w't 22 lbs., 9.00
Large, without standard, w't 11 lbs., 8.25

RAYMOND'S PATENT WIRING.

With Adjustable Boxes.

With Standard, w't lbs., each $12.00
Without Standard, w't lbs., 11.25

RAYMOND'S PATENT TURNING.



Small.

With Adjustable Boxes and Extra Faces.

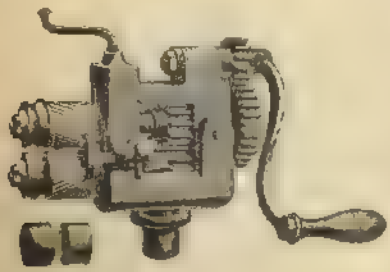
Small, with standard, w't 23 lbs., each $ 0.00
Small, without standard, w't 12 lbs., 9.75
Large, with standard, w't 27 lbs., 0.00
Large, without standard, w't 16 lbs., 0.00

Above machines and attachments are adapted to all of Raymond's machines.

TINNERS' TOOLS AND MACHINES.

CRIMPING MACHINES.

Packham's, for stove and conductor pipe with standard w t 24 lbs., each $10.00

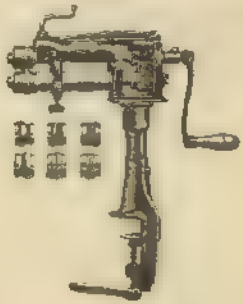


No. 7 Stove pipe crimper and beader rollers with standard w t 45 lbs., each $12.00

CRIMPING TONGS.

Packham's, for , po and round w t 2 lbs per pair $ .25

STOW'S PATENT BEADING MACHINES.



No. 4 with Standard

With Adjustable Boxes and Duplicating Parts.

No 4 to tin, with rotary standard w lbs. each $ .75

No 5 4 in to tin, with rotary and rotary standard w t 20 lbs. each 6.75

The four sizes of Stow's ... single ... double ... one ... single bead ... bead, small ... 2 beads and ... bead

IMPROVED BEADING MACHINES.

No with Six Ad

No 1 to in. with and rotary standard w lbs. each $32.25

No 2 to in with and rotary standard w lbs

No 3 to in with and rotary standard w lbs

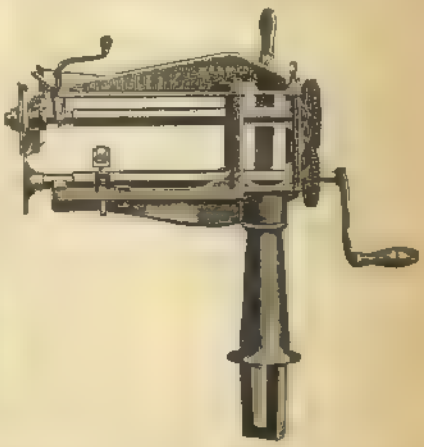
TINNERS' MACHINES.

STOW'S DOUBLE SEAMING.

No. 5

No. 5—With setting down attachment, w't 5 lbs., each $28.00
No. 10—Without setting down attachment, w't 98 lbs., " 24.00
Extra Discs, " 1.50
Extra Heads, " 2.00

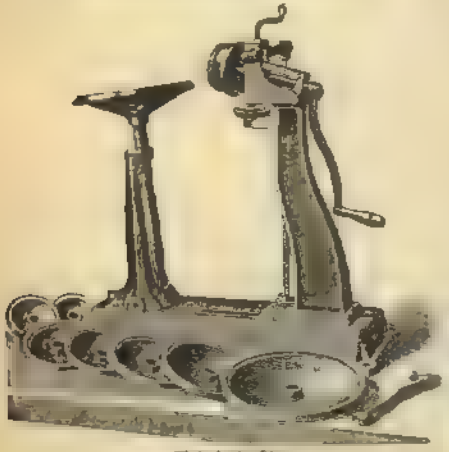
MOORE'S DOUBLE SEAMING.



With Standard.

No. 2—Moore's, 3 in., for common work, 4 in. face, w't 45 lbs., each 3.9.00

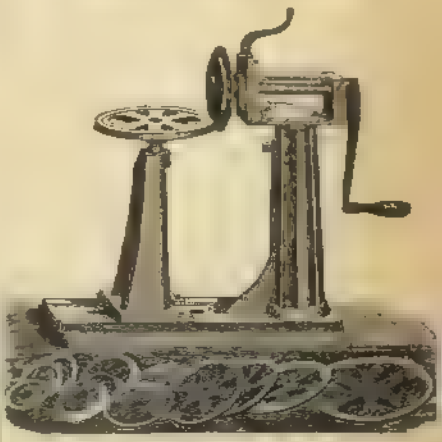
OLMSTED'S DOUBLE SEAMING.



With Eight Discs.

No. 1—With setting down attachment, w't 102 lbs., each $30.00
No. 3—Without setting down attachment, w't 95 lbs., " 25.00

HULBERT'S DOUBLE SEAMING.



With Ten Discs and Four Faces.

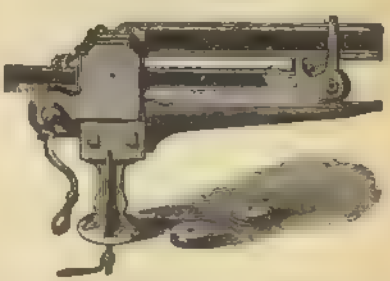
No. 1—With deflector, w't 97 lbs., each $30.00
No. 2—Without deflector, w't 107 lbs., 25.00

TINNERS' MACHINES.

ENCASED GROOVING.

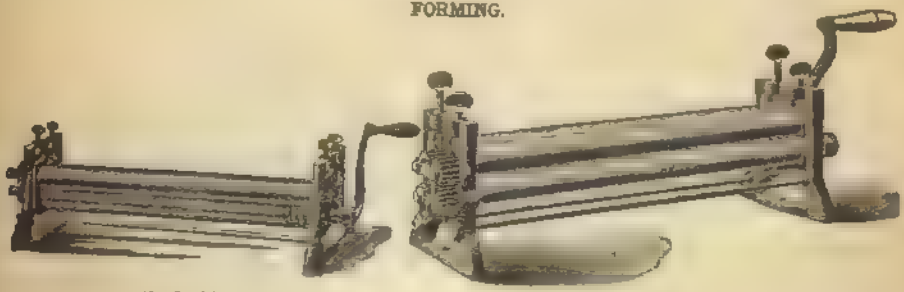
No. 1—For heavy work, 30 in. with rotary standard, w't 76 lbs., ... each $13.50
Extra Standard, ... " .75

BRASS MOUNTED.



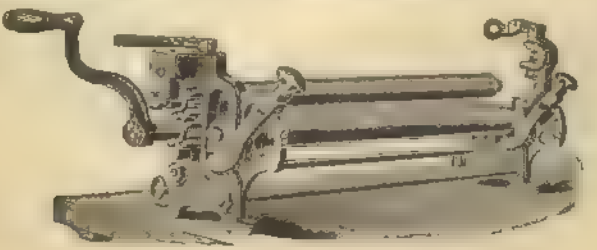
No. 01 For heavy work, 20 in., with standard, w't 78 lbs., each . . . . . $ 3.50
Extra Standards, ... each .75

FORMING.



Nos. 2 and 1. Nos. 11 and 12.

No. 2—Stove pipe former, 1¾ in. rolls, 30 in. long, weight 105 lbs. . . . . each $15.00
No. 1—Stove pipe former, 2 in. rolls, 30 in. long, weight 70 lbs. 9.00
No. 11—Patent stove pipe former, with compensating gears, 2 in. rolls, 30 in. long, weight 90 lbs. 15.00
No. 12—Patent stove pipe former, with compensating gears, 2 in. rolls, 40 in. long, weight 120 lbs. 20.00



No. 100—Cranders' patent slip roll stove pipe former, 2 in. rolls, 30 in. long, weight 125 lbs. . . . . each $22.00

TINNERS' TOOLS AND MACHINES.

EAVE TROUGH END FORMERS.

No. 6 [illegible] cast iron, two sizes, for 3 to 5 in. trough [illegible] per set of two $1 50

For [illegible] the straight or irregular [illegible] shown [illegible] the ends [illegible] work [illegible] are [illegible] deeper than [illegible] any other set. A [illegible] can have an end put in each parts, preventing waste. Old work can be [illegible] from a ladder. The first will not burst the end out. The forms are light enough to use anywhere the work is to be done, and are made in two sizes, on which all sizes from 3 to 5 in. troughs can be closed

GUTTER BEADERS AND RODS.

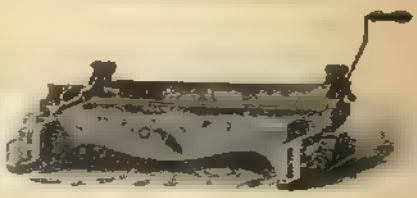
No. 11—Iron bottom, with enclosed rod, 20 in. long [illegible] and [illegible] rod [illegible] lbs. [illegible] each $4 50
No. 02 [illegible] rod, 30 [illegible] and [illegible] rod, wt 8 lbs. [illegible] each 5 00
Gutter Rods, [illegible] in diameter [illegible] long, for No. [illegible] beaders [illegible] lbs. each 2 00
Gutter Rods, [illegible] in diameter [illegible] long, for No. 02 beaders [illegible] lbs. each 3 00

GUTTER BEADERS

No. 10—Straw's improved cast steel rod, 20 in. long [illegible] and ½ in. diameter, wt 40 lbs. each $5.50

No. 1 [illegible] patent, cast steel rod, 20 in. long by ⅜ ⅝ and [illegible] diameter, wt 30 lbs., each $ 5.50
No. 0 [illegible] patent, cast steel rod, 30 in. long by ⅝, ⅜ and ⅜ in. diameter, wt 65 lbs., each 10.00

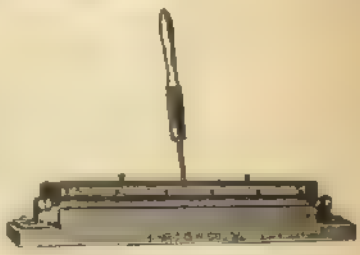
TIN FOLDING MACHINES.



No. 152—Straw's, patent, adjustable, 20½ in., with [illegible] locks from ⅜ to 4 in., wt 80 lbs. each $30 00
No. 154 [illegible] adjustable [illegible] in., with [illegible] locks from ⅜ to [illegible] wt 45 lbs. each 40 00

SHEET IRON FOLDING MACHINES.

No. 1 30 in. Wanzer's improved, with turn locks ⅛ and [illegible] wt [illegible] lbs. each $32 00
No. 12 [illegible] Wanzer's improved, with turn locks ⅛, ⅜, [illegible] and [illegible] in., wt [illegible] lbs. each 15 00



No. 30—30 in. wood bottom, wt 86 lbs., each $.0.00

TINNERS' MACHINES.

STOW'S IMPROVED SQUARING SHEARS.

For Cutting Sheet Metal.

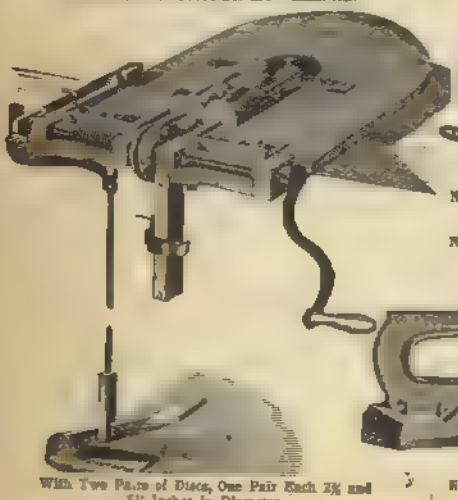
No. 120—With frame for No. 20 iron, cuts 42 in. wide, 350 lbs. . . . . each $35 00
No. 130—With frame, for No. 18 iron, cuts 31 in. wide, 450 lbs. . . . . each 50 00
No. 136—With frame for No. 18 iron, cuts 37 in. wide, 650 lbs. . . . . each 62 00

HULL'S ACME SQUARING SHEARS.

For Cutting Sheet Metal.

No. 2 Acme, with frame for No. cuts 1 wide, 450 lbs. . . . . each $46 00

NEWTON'S CIRCULAR SHEARS.



With Two Pairs of Discs, One Pair Each 2½ and 5½ Inches in Diameter.

Newton's, with 2½ Ib. each $22 00

Will cut circles from 2 to 14 in. in diameter.

FLANDER'S CIRCULAR SHEARS.

Will Cut Circles from 2½ to 23 Inches in Diameter

No. 1—With 4 pair of discs, each 4¾ and in. in diameter, a pair of cutters without edge turner, will l lbs. each $45 00
No. 1—With edge turner, as shown above, wi 0 lbs. 50 00

WAUGH'S CIRCULAR SHEARS

No. 1 For sh wi l ar discs and ers will cut circle in. to 15 in. in diameter w 60 lbs. each $30 00
No. 2 will cut 2½ to 20 in. in diameter w 70 lbs. otherwise same as No. 1, ... each 38 00

TINNERS' TOOLS.

WROUGHT IRON STAKES, WITH STEEL FACES.

No. 1—Beakhorn stake w't 45 lbs. each $15 00

No. 8. No. 84.

No. 8—Common Creasing, 14⅜ in. long, w't 12½ lbs., each $4.00

No. 84—Creasing with both ends round, w't 10 lbs. each 4 50

No. 68—Common Blowhorn, large end 9 in. small end 2½ in. w't 9 lbs. each $5 00

No. 6. No. 65.

No. 6—Needle Case Mandrel, end 8 in. small end 0½ in. w't 4 lbs. each $2 25

No. 65—Candle Mould, small end 1½ in. horn 8½ in. w't 6 lbs. each 2.75

No. 1—Double Seaming large end 17 in., small end 12 in. w't 34 lbs., each $9.00

No. 2 Double Seaming each end 11 in. w't 29 lbs. 00

No. 66. No. 6.

No. 66—Common Square tapering, 14½ in. w't 8 lbs. each $3 00

Hatcher

No.	1	2	3	4	5	6
Length of blade,	16	14½	13	12	9	7 in.
Weight,	14	12	9	6	4	3 lbs
Each	$5 00	4 25	3 50	2.75	2.25	1 75

CAST IRON STAKES.

No. 5, Round. No. 4, Oval. No. 6, Square. No. 7, Oblong

No. 48—Double Seaming with 4 heads, round, square, oblong and oval, weight 85 lbs. each $4 00

Extra Heads, for double seaming No. 5 round, No. 4 oval, No. 6 square and No. 7 oblong 50

In ordering any of the above extra heads, use numbers.

TINNERS' TOOLS.

CAST IRON STAKES.

No. 54—Round head, w't 11 lbs., - - - each $1 25

No. 0—Mandrel, 3 ft. 4 in. long to the standard, w't 37 lbs., each, - - - - - - - - $5 00
No. 1—Mandrel, 2 ft. 10 in. long to the standard, w't 44 lbs., each, - - - - - - - - 5.00

No. 1—Conductor, turned, large end 15 in., small end 11½ in. long, w't 25 lbs. each $4 00

No. 67—Hollow mandrel, 3 ft. 4 in. entire length, w't 45 lbs., each - - - - - - $5 50

BENCH PLATES.

Cast Iron, Polished.

No. 1—37x8 in. w't 50 lbs. - - - - each $5.00
No. 2—30x6 in., w't 37 lbs. - - - - - 3 00

UNIVERSAL STAKE HOLDERS.

No. 90—Full set, comprising 7 different stakes, with stake holder, w't 139 lbs., - - - - each $35.00
No. 91—Stake holder, w't 25 lbs. - - - " 4 00
No. 92—Beading for stake holder w't 3 lbs. - " 10.00
No. 93—Blowing for stake holder w't lbs. - " 3 75
No. 94—Creasing and hem for stake holder w't 9 lbs. " 3.50
No. 95—Double seaming for stake holder w't 23 lbs., " 6.00
No. 96—Conductor for stake holder w't 26 lbs " 4.00
No. 97—Candle mould, for stake holder w't 4½ lbs., " 2.00
No. 98—Nozzle and for stake holder w't 4 lbs. - " 75

SQUARE PAN SWEDGES.

No. 7—W't 11 lbs., - - - - - - each $3 00

SQUARE PAN TURNERS.

No. 1—Steel 20 in., w't 6 lbs., - - - - each $2.50

TINNERS' TOOLS.

STRAIGHT HAND SHEARS OR SNIPS.

P. S. & W. Co's, Wrought Handle.

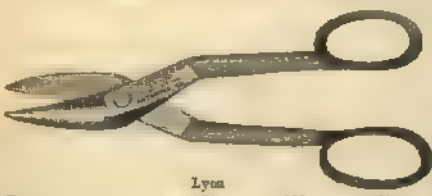
Nos.	6½	7	8	9	10	11
Cut (catalogue)	4	4	3	[illegible]	2	in.
Cut (actual)	4	[illegible]	3	2¾	2½	in.
Weight	[illegible]	[illegible]	2	1½	1	lbs.
Per pair	[illegible]	[illegible]	2.00	.50	[illegible]	

The lengths of cut given in these [illegible] are those [illegible] quality. We have found it necessary to [illegible] figures of the different sizes are what [illegible] weight.

National Co's, Wrought Handle.

Nos.	6½W	7W	8W	9W	10W
Cut (catalogue)	4½	4	3½	3	[illegible] in.
Cut (actual)	4¾	3½	3¾	3	[illegible] in.
Weight	3½	2½	2½	2	[illegible] lbs.
Per pair	$3.00	2.50	2.00	[illegible]	[illegible]

No. 30—Chilled [illegible] cut 3 in., w't 1½ lbs., [illegible] per pair 50 60



Lyon

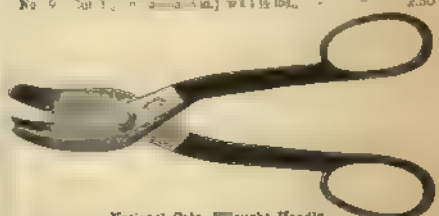
Nos.	170	180	190
Cut (catalogue description)	4	3½	3
Cut (actual)	4½	3	3¼
Weight	2¾	2	1½ lbs.
Per pair	$3.50	2.00	1

These shears are made [illegible] of the best [illegible] material, and are made of such a quality and strength [illegible] the blades are ground and [illegible] sharp pointed and can be used for [illegible] work. They are made [illegible] with all heavy forged handles and steel blades, and are fully warranted.

CIRCULAR HAND SHEARS OR SNIPS.

P. S. & W. Co's, Wrought Handle.

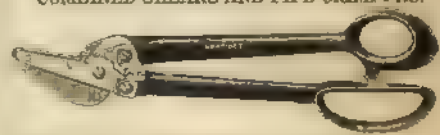
No. 8—Cut 3¼ [illegible] actual 3 in.), w't 2 lbs., [illegible] per pair $3.00
No. 9—Cut 3 [illegible] actual 3 in.), w't 1½ lbs., [illegible] 2.50



National Co's, Wrought Handle.

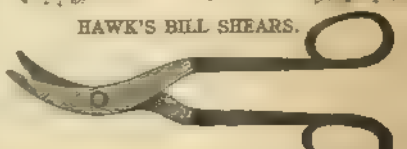
No. 8W—Cut [illegible] in. actual 3 in.), w't 2½ lbs., per pair $3.00
No. 9W—Cut [illegible] in. (actual 2¾ in.), w't 1¾ lbs., " 2.50

COMBINED SHEARS AND PIPE CRIMPERS.



No. 2—Combined [illegible] cutting shears and [illegible] lined [illegible] blades, parts steel [illegible] 8 in. length [illegible] w't 2¼ lbs. [illegible] per pair $1.0

HAWK'S BILL SHEARS.



No. 15—Pointed snips, w't per pair 1¼ lbs., [illegible] per pair $3.00

BENCH SHEARS.

Nos.	00	0	1	2
Cut (catalogue)	12	10½	9	8½
Cut (actual)	11	9½	8	7¾
Weight	4	[illegible]	22	[illegible] lbs.
Per pair	$ 3.50	2.00	5.00	7.00
Nos.	3	4	5	6
Cut (catalogue)	6¼	5	7	6 in.
Cut (actual)	7¼	7¼	6½	5½ in.
Weight	4	13	8½	6½ lbs.
Per pair	$6.00	5.00	4.00	3.50

TINNERS' TOOLS.

CUTTING NIPPERS.

Cast Steel Jaws.

Nos.	1	2	3	4	5
Length,	12	0⅛	9⅜	6	7 in.
Weight,	2½	1⅜	1⅛	1	⅜ lb.
Per pair,	$3.25	2.00	1.50	.40	1.0

PATENT CUTTING NIPPERS.

Acme Steel Jaws.

Nos.	1	2	3	4
Length				
Weight				lbs.
Each	⅝	0⅝	1	
			per pair	$

Carew, Forged Hardened Tool Steel Jaws.

Nos.	1	2	3	4	5
Length,	1¼				in.
Weight,	3⅜				lbs.
Each,	$3.00				
Extra jaws, per pair	.70				

HURWOOD TINNERS SCRATCH AWLS

No. 77. Length [illegible] beech, all iron mortised and nickel plated point, shank running through handle, with [illegible] headed, [illegible] polished [illegible] handle with [illegible] ferrule. [illegible] per dozen, $4.00

WIRE CHISELS.

Cast Steel.

Width,	⅛	¼	½	⅝	¾ in.
Each,	$0.08	.09	0	[illegible]	[illegible]
Width	⅛	1	1⅛	1¼	1½ in.
Each	$0.3	.14	[illegible]	[illegible]	.20

¼ TO ¾ IN. ONE DOZEN ASSORTED HALF DOZEN IN A BOX

LANTERN CHISELS.

Cast Steel, [illegible] each $0.12

One hollow for a nail

SOLID PUNCHES

Cast Steel

Nos.	0	1	2	3	4	5	6	7	8
	[illegible]								
Inches, assorted,	12								
Each,	$0.2						12	12	

In Sets, including one each [illegible] punches, ¾ in. wire and lantern ch[illegible] lbs. per set, - per set $0.70

PRICK PUNCHES.

Cast Steel, [illegible] each $0.12

HOLLOW PUNCHES

Diameter	⅛	¼	½	¾	⅞ in.
Weight	[illegible]				lb.
Each	$0.25	.30	.5[illegible]	.52	
Diameter,	1	1	1⅛	1⅜	1½ in.
Weight	[illegible]				
Each	$0.60	[illegible]	[illegible]	[illegible]	1.5[illegible]
Diameter,	1⅝	1[illegible]	2⅛	2½	3 in.
Weight	[illegible]				lbs.
Each	$.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

HAND GROOVERS

Nos.	00	0	1	2
Width	[illegible]	[illegible]	[illegible]	[illegible]
Weight	[illegible]	[illegible]	[illegible]	[illegible] lbs.
Each	$0.75	.75	.[illegible]	.[illegible]
Nos.	3	4	5	6
Groove	[illegible]	[illegible]	[illegible]	[illegible]
Width	[illegible]	[illegible]	[illegible]	[illegible] in.
Each	$0.[illegible]	[illegible]	[illegible]	.17

FINEST RICH AMERICAN CUT GLASS.

CARAFE—Meteor Pattern
No. 5580 Capacity 1 quart, ea., $7 55

CARAFE.—Rex Pattern.
No. 5581 Capacity 1 quart ea., $9 20

CARAFE.—Bedford Pattern
No. 5582 Capacity 1 quart ea., $8 85

CARAFE.—Baltimore Pattern
No. 5583 Capacity 1 quart ea., $9 20

CARAFE.—Round Pattern.
No. 5584 Capacity 1 quart ea., $9 20

CARAFE.—Bermuda Pattern
No. 5585 Capacity 1 quart ea., $9 20

CARAFE.—Tuxedo Pattern
No. 5586 Capacity 1 quart ea., $8 85

CARAFE.—Delmar Pattern
No. 5587 Capacity 1 quart ea., $10 90

CARAFE—Orient Pattern.
No. 5588 Capacity 1 quart, each $10 00

CARAFE.—Regal Pattern
No. 5589 Capacity 1 quart, each $7 55

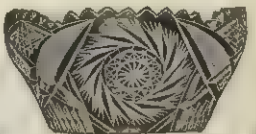
CARAFE.—Dorf Pattern
No. 5590 Capacity 1 quart, each $9 20

CARAFE.—Golden Rod Pattern
No. 5591 Capacity 1 quart, each $16 70

CARAFE.—Norway Pattern.
No. 5592 Capacity 1 quart, each $11 70

FLOWER HOLDER—Golden Rod Pattern
No. 5593 Three inch, each, $ 6 70
No. 5594 Four inch, " 9 20
No. 5595 Six inch, " 16 70
No. 5596 Eight inch, " 31 70
No. 5597 Ten inch, " 46 00

BUTTER DISH.—Orland Pattern.
No. 5598 Four and a quarter inch cover, seven inch plate, each $16 70



WHIPPED CREAM BOWL
Burlington Pattern.
No. 5599 Six inch. . . .each, $11 70

CHEESE PLATE AND COVER
Golden Rod Pattern
No. 5600 Five inch . each, $50 00
No. 5601 Six inch... " 40 00

The above prices are subject to the regular discount.

FINEST RICH AMERICAN CUT GLASS.

WATER SET.—No. 32 Pattern.

No. 5602 Set consists of one carafe, capacity 1 quart, six tumblers, capacity ½ pint, and one 14-inch mirror plateau, complete set.....$18 10

WATER SET.—Golf Pattern.

No. 5603 Set consists of one carafe, capacity 1 quart, six tumblers, capacity ½ pint, and one 14-inch beaded mirror plateau, complete set.....$25 20

WATER SET.—Bedford Pattern.

No. 5604 Set consists of one carafe, capacity 1 quart, six tumblers, capacity ½ pint, and one 14-inch mirror plateau, complete set.....$21 90

WATER SET.—Baltimore Pattern.

No. 5605 Set consists of one carafe, capacity 1 quart, six tumblers, capacity ½ pint, and one 14-inch star mirror plateau, complete set.....$26 50

WATER SET.—Bermuda Pattern.

No. 5606 Set consists of one pitcher, capacity 3 pints, six tumblers, capacity ½ pint, and one 14 inch star plateau, complete set.....$27 80

WINE SET.—Golf Pattern.

No. 5607 Set consists of handled decanter, capacity one quart, six wine glasses and one 12-inch mirror tray, complete set.....$41 00

The above prices are subject to the regular discount

FINEST RICH AMERICAN CUT GLASS.

CLARET JUG.—Gibson pattern.
No. 5608 Each $23 35
Capacity 2 quarts.

PITCHER.—Esther pattern.
No. 5609 Capacity 1 quart... each, $25 00
No. 5610 Capacity 2 quarts... " 31 70

PITCHER. Tyrone pattern.
No. 5611 Each $25 00
Capacity 2 quarts.

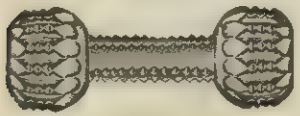
BELL.
Premier pattern.
No. 5612 6 inch, each $5 00

WINE SET.—Glenwood pattern.
No. 5613 Complete set $62 50
Set consists of unhandled decanter, capacity one quart, ½ dozen sherry glasses and one 12 inch mirror tray.

WINE SET.—Glenwood pattern.
No. 5614 Complete set $65 00
Set consists of handled decanter, capacity one quart, ½ dozen wine glasses and 12 inch mirror tray.

KNIFE REST.—Lapidary No. 840 pattern.

No. 5615	2½ inch	each,	$0 80
No. 5616	3½ inch	"	1 25
No. 5617	5 inch	"	1 95



KNIFE REST.—Prism pattern.

No. 5618	2½ inch	each,	$0 80
No. 5619	3½ inch	"	1 25
No. 5620	5 inch	"	1 95

TOOTH PICK OR MATCH HOLDER.
Shelby pattern.
No. 5621 Each, $3 35
Height 3½ inches.

WHISKEY SET.—Edith pattern.
No. 5622 Complete set... $42 70
Set consists of handled whiskey jug, capacity one quart, ½ dozen whiskey glasses and one

The above prices are subject to the regular discount

FINEST RICH AMERICAN CUT GLASS.

PITCHER—Bermuda pattern.
No. 5623 2 pint size. . each $14 20
No. 5624 1 pint size . . " 10 20

PITCHER—Golf pattern.
No. 5625 1 quart size . each $16 70
No. 5626 2 quart size . " 23 35

PITCHER—Cedar pattern.
No. 5627 1 pint size . each $15 00
No. 5628 1 quart size . " 19 20
No. 5629 3 pint size . . " 25 00

PITCHER—Etna pattern.
No. 5630 1 quart size . each $18 35
No. 5631 2 quart size . . " 23 35

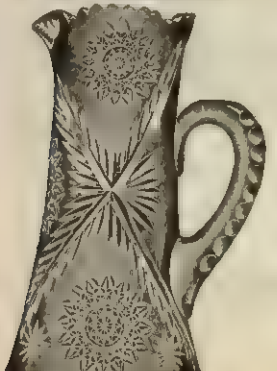
PITCHER—Colony pattern.
No. 5632 Capacity 2 quarts . each $40 00

PITCHER—Ethe. pattern.
No. 5633 1 quart size. . each $21 70
No. 5634 2 quart size. . " 28 35

PITCHER—Golden Rod pattern.
No. 5635 Capacity 2 quarts. . each $20 00

PITCHER—Bermuda pattern.
No. 5636 1 quart size . each $10 00
No. 5637 2 quart size . . " 12 55

PITCHER—Delta pattern.
No. 5638 ½ pint size . each $10 00
No. 5639 1 pint size . " 13 35
No. 5640 1 quart size . " 18 70
No. 5641 2 quart size . . " 20 00



CLARET JUG—Bermuda pattern.
No. 5642 Capacity 5 pints. . . . . each $28 35

These prices are subject to the regular discount.

PITCHER—Excelsior pattern.
No. 5643 1 quart size . . each $40 00
No. 5644 2 pint size. . " 46 70

PITCHER—Rex pattern.

FINEST RICH AMERICAN CUT GLASS.

PRICES EACH.

HANDLED DECANTER
Golf Pattern.
No. 5646 Capacity 1 pt $13 35
No. 5647 Capacity 1 qt 16 70

HANDLED DECANTER
Rex Pattern
No. 5648 Capacity 1 pt $15 00
No. 5649 Capacity 1 qt 18 35

WHISKEY JUG
Electric Pattern.
No. 5650 Capacity 1 qt $16 70

WHISKEY JUG
Cedar Pattern
No. 5651 Capacity 1 qt $21 70

HANDLED DECANTER.
Edna Pattern
No 5652 Capacity 1 qt $20 00

UNHANDLED DECANTER.
Eureka Pattern
No. 5653 Capacity 1 pt $11 70
No. 5654 Capacity 1 qt . 15 00

UNHANDLED DECANTER
Glenwood Pattern
No. 5655 Capacity 1 qt $23 35

UNHANDLED DECANTER.
Delmar Pattern
No. 5656 Capacity 1 pt $12 55
No. 5657 Capacity 1 qt 15 90

CIGAR JAR
Norway Pattern
No. 5658 Capacity 50 cigars $23 35

CIGAR JAR
Seaside Pattern.
No. 5659 Capacity 25 cigars $18 35

NAPPY.—Hampton Pattern
No. 5660 8-inch. $15 00
No. 5661 9-inch. 18 35

HANDLED NAPPY Golf Pattern
No 5662 5-inch $4 20
No 5663 6-inch 4 75

HANDLED NAPPY.—Delmar Pattern
No 5664 5-inch $4 60
No 5665 6-inch 5 15

HANDLED NAPPY.—Webster Pattern
No 5666 5-inch $5 00
No 5667 6-inch 5 90

HANDLED NAPPY.—Rye Pattern.

HANDLED NAPPY.—Elm Pattern.
No. 5670 6-inch $3 90

HANDLED NAPPY.—Astor Pattern.
No. 5671 5-inch .
No. 5672 6-inch

FINEST RICH AMERICAN CUT GLASS

NAPPY.—Golf pattern.

No. 5673 4½ in. square ..... each $4 20
No. 5674 5½ " " ..... " 5 00

NAPPY.—Navajo pattern.

No. 5675 7 inch oblong..... each $8 35

NAPPY.—Reed pattern.

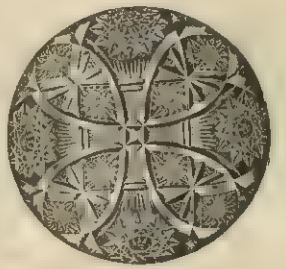
No. 5676 8 inch, oval ..... each $8 35

NAPPY.—Delmar pattern.

No. 5677 7 inch ..... each $ 7 55
No. 5678 8 " ..... " 10 00
No. 5679 9 " ..... " 12 35

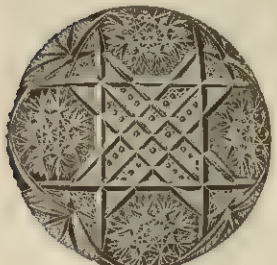
NAPPY.—Don pattern.

No. 5680 8 inch..... each $12 35
No. 5681 9 " ..... " 18 35



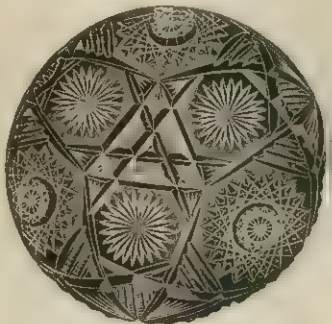
NAPPY.—Ambrose pattern.

No. 5682 7 inch. ..... each $10 00
No. 5683 8 " ..... " 13 35
No. 5684 9 " ..... " 16 70



NAPPY.—Fawn pattern.

No. 5685 8 inch ..... each $13 35



NAPPY.—Corsair pattern.

No. 5686 7 inch ..... each $ 7 00
No. 5687 8 " ..... " 9 00
No. 5688 9 " ..... " 12 00

NAPPY.—St. Louis pattern.

No. 5689 7 inch ..... each $ 7 35
No. 5690 8 " ..... " 9 55
No. 5691 9 " ..... " 12 70

NAPPY.—Golden Rod pattern.

No. 5692 7 inch. ..... each $ 7 35
No. 5693 8 " ..... " 9 55
No. 5694 9 " ..... " 12 70

NAPPY.—Gem pattern.

No. 5695 7 inch ..... each $ 6 35
No. 5696 8 " ..... " 8 00
No. 5697 9 " ..... " 10 70
No. 5698 10 " ..... " 14 20

NAPPY.—Bermuda pattern.

No. 5699 7 inch ..... each $ 7 00
No. 5700 8 " ..... " 9 00
No. 5701 9 " ..... " 12 00

The above prices are subject to the regular discount.

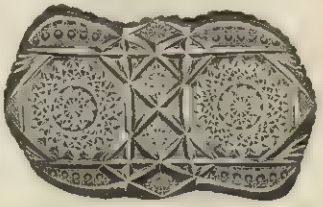
FINEST RICH AMERICAN CUT GLASS.

OLIVE DISH.—Jove pattern.
No. 5702 9 inches across handles ..... each $9 20

OLIVE DISH.—Prospect pattern.
No. 5708 Length 7 inches ..... each $7 55

BON BON Dish Arbor pattern.
No. 5704 Length 6¼ inches each $5 90

BON BON DISH.—Prince pattern
No. 5705 Length 7¼ inches each $7 55



FLAT BON BON OR TRAY.—Murray pattern.
No. 5706 Length 7½ inches each $7 55

BON BON.—Ogden pattern
No. 5707 Length 8 inches ..... each $6 70

PLATE.—Golf pattern.
No. 5709 6¼ inch each $5 00

FANCY DISH Golf pattern.
No 5709 5½ inch. each $4 20
No 5710 6½ " " 5 00

FANCY SHAPED 10-INCH DISH
Henry pattern
No. 5711 2¾ inches high, each $18 35

BON BON.—Celtic pattern
No. 5712 5 inch... ....each $3 25

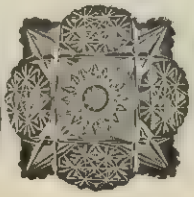
BON BON.—Henry pattern
No. 5713 6½ inch each $5 90

SHELL SHAPED BON BON.
Burton pattern
No. 5714 8 inch. each $6 70

BON BON Tacoma pattern.
No. 5715 6½ inch each $5 90

FANCY AND SCALLOPED DISH
Orian pattern.
No 5716 9 inch each $15 00

BON BON.—Irwin pattern.
No. 5717 Length 6 in each $6 35



BON BON.—Rex pattern.
No. 5718 5½ inch each $5 00

PLATE.—Celtic pattern.
No. 5719 7 inch. each $3 00

PLATE.—Delmar pattern
No. 5720 7 inch ....each $4 90

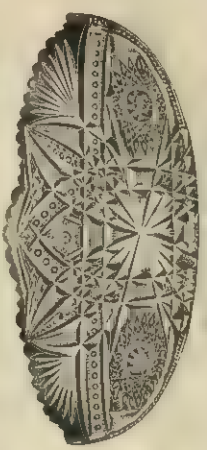
The above prices are subject to the regular discount.

FINEST RICH AMERICAN CUT GLASS.

PRICES EACH.

CELERY TRAY.—Bermuda pattern.
No. 5721 Size 4½x11¾ inches ..... each, $7 55

CELERY TRAY.—Othello pattern.
No. 5722 Size 4½x11½ inches ..... each, $9 20



CELERY TRAY.—Henry pattern. each, $13 35
No. 5725 Size 6x11¾ inches ... each, $16 70

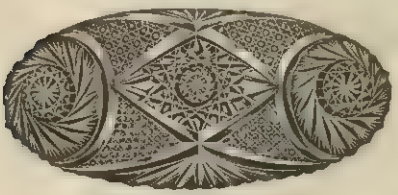
CELERY TRAY.—Madison pattern.
No. 5723 Size 4½x11¾ inches. . . each $8 35

CELERY TRAY.—Cliff pattern
No. 5724 Size 4½x10¾ inches each, $9 20

CELERY TRAY.—Wanda pattern.
No. 5726 Size 4¾x10¾ inches . each, $9 20

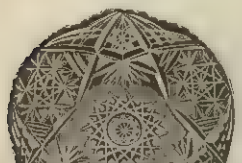
CELERY TRAY.—Golden Rod pattern.
No. 5727 Size 5x11 inches..... ..each, 11 70

CELERY TRAY.—Pearl pattern. each, $16 70
No. 5730 Size 4¾x11½ inches .....



CELERY TRAY.—Homer pattern
No. 5728 Size 6x11½ inches . each, $13 35

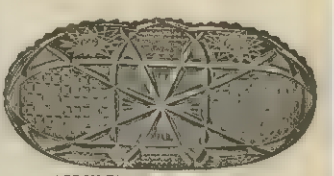
SPOON TRAY.—Carson pattern.
No. 5729 Length 8 inches.....each, $5 00



SAUCER.—Rex pattern.
No. 5731 5 inch. each, $3 75
No. 5732 6 inch " 4 35

SAUCER.—Frisco pattern.
No. 5733 5 inch each, $5 00
No. 5734 6 inch " 6 70

COMFORT PLATE.
West pattern.
No. 5735 Diam 6½ in. with shallow 2 in. button foot ea., $3 35



SPOON TRAY.—Laura pattern
No. 5736 Length 7½ inches each, $3 35

SAUCER.—Delmar pattern.
No. 5737 5 inch ... each, $4 20
No. 5738 6 inch " 4 75

SAUCER.—Golf pattern
No. 5739 5 inch . each, $3 75
No. 5740 6 inch " 4 35

SAUCER.—Bermuda pattern.
No. 5741 5 inch. .. each, $4 20
No. 5742 6 inch . " 4 75

SAUCER.—Rye pattern.
No. 5743 5 inch. . .each, $3 60
No. 5744 6 inch " 4 20

SAUCER.—Dow pattern.
No. 5745 5 inch each, $5 00
No. 5746 6 inch " 5 90

The above prices are subject to the regular discount.

FINEST RICH AMERICAN CUT GLASS.

OIL OR VINEGAR.
Golf pattern.
No. 5747 Each..... $5 40
Capacity ½ pint.

OIL OR VINEGAR
Berkshire pattern.
No. 5748 Each.....$5 00
Capacity ½ pint.

OIL OR VINEGAR.
Garland pattern
No. 5749 Each.....$7 55
Capacity ½ pint.

OIL OR VINEGAR.
Electric pattern.
No. 5750 Each $5 00
Capacity ½ pint.

OIL OR VINEGAR.
Belle pattern
No. 5751 Each. $5 00
Capacity ½ pint.

Finest Goods on the Market. Prices and Quality Considered.

OIL OR VINEGAR.
Bond pattern.
No. 5752 Each $5 90
Capacity ½ pint.

OIL OR VINEGAR.
Golf pattern.
No. 5753 Each $6 70
Capacity ½ pint.

OIL OR VINEGAR.
Prism pattern.
No. 5754 Each $4 60
Capacity ½ pint

OIL OR VINEGAR.
Bermuda pattern
No. 5755 Each $4 60
Capacity ½ pint.

OIL OR VINEGAR.
Norway pattern
No. 5760 Each $7 55
Capacity ½ pint

OIL OR VINEGAR.
Rex pattern.
No. 5757 Each $6 70
Capacity ½ pint.

SYRUP.
Electric pattern
No. 5758 Each $9 20
Capacity ½ pint.

SYRUP.
Electric pattern.
No. 5759 Each $9 20
Capacity ½ pint.

SYRUP.
Glenwood pattern.
No. 5700 Each $10 00
Capacity ½ pint.

TOOTHPICK HOLDER
Prism pattern.
No. 5761 Each $1 10
Height 2½ inches.

TOOTHPICK HOLDER
Lapidary pattern
No. 5762 Each $1 25
Height 2¾ inches.

FOOTED
TOOTHPICK HOLDER
No. 5765 Each. $1 50
Height 2¾ inches.

SALT AND PEPPER.
No. 95 pattern.
No. 5764 Per pair. ..$4 85
Sterling silver tops,
height 3¼ inches.

SALT AND PEPPER.
No. 68 pattern.
No. 5765 Per pair $1 95
Sterling silver tops,
height 3⅜ inches.

SALT AND PEPPER.
No. 84 pattern.
No. 5766 Per pair ...$1 95
Sterling silver tops,
height 3¼ inches.

SALT AND PEPPER.
No. 77 pattern.
No. 5767 Per pair $2 40
Sterling silver tops,
height 2¾ inches.

SALT AND PEPPER
No. 76 pattern
No. 5768 Per pair $1 40
Sterling silver tops,
height 2⅝ inches.

The above prices are subject to the regular discount.

FINEST RICH AMERICAN CUT GLASS.

TUMBLERS.
Strawberry Diamond pattern
No. 5769 Per doz $14 55
Capacity ½ pint

TUMBLERS.
Knox pattern
No. 5770 Per doz $15 00
Capacity ½ pint.

TUMBLERS.
Delmar pattern.
No. 5771 Per doz $30 00
Capacity ½ pint.
No. 5772 4 oz Whisky Glasses, per doz $21 70

TUMBLERS.
Orient pattern
No. 5773 Per doz $60 00
Capacity ½ pint.
No. 5774 4 oz Whisky Glasses, per doz $23 40
No. 5775 Champagne Glasses, height 4½ in, per doz $25 00

TUMBLERS.
Leaf pattern
No. 5776 Per doz $23 40
Capacity ½ pint
No. 5777 4 oz Whiskey Glasses, per doz $18 35
No. 5778 Champagne Glasses, height 4½ in, per doz $21 70

TUMBLERS.
Newport pattern.
No. 5779 Per doz $36 70
Capacity ½ pint
No. 5780 4 oz Whiskey Glasses, per doz $23 40
No. 5781 Champagne Glasses, height 4½ in, per doz $25 00

TUMBLERS
Bermuda pattern.
No. 5782 Per doz $17 55
Capacity ½ pint.

TUMBLERS.
Bedford pattern
No. 5783 Per doz $18 35
Capacity ½ pint.

TUMBLERS.
Round pattern
No. 5784 Per doz $21 70
Capacity ½ pint.

TUMBLERS.
Rake pattern.
No. 5785 Per doz $23 40
Capacity ½ pint.

TUMBLERS.
Venus pattern.
No. 5786 Per doz $26 70
Capacity ½ pint.

TUMBLERS.
Ewer pattern.
No. 5787 Per doz $30 00
Capacity ½ pint.

TUMBLERS.
Colony pattern.
No. 5788 Doz $30 00
Capacity ½ pint.

TUMBLERS.
Golden Rod pattern.
No. 5789 Doz $40 00
Capacity ½ pint.

TUMBLERS.
Progress pattern.
No. 5790 Doz $66 70
Capacity ½ pint.

PUNCH CUP.
Golf pattern
No. 5791 Per doz $26 70
Height 3¼ inches.

PUNCH CUP.
Progress pattern
No. 5792 Per doz $50 00
Height 2¼ inches.

HANDLED LEMONADE CUP.
Delmar pattern.
No. 5793 Per doz $85 00
Height 2¼ inches.

GOBLET.
Delmar pattern.
No. 5794 Doz $46 70
Height 6 inches

CHAMPAGNE.
Delmar pattern
No. 5795 Doz $48 35
Height 5¾ inches.
No. 5796 With hollow stems, doz. $58 35

CLARET.
Delmar pattern.
No. 5797 Doz $38 35
Height 4¾ inches

WINE.
Delmar pattern.
No. 5798 Doz $33 35
Height 4 inches

COCKTAIL.
Delmar pattern.
No. 5799 Doz $40 00
Height 4 ¼ inches

SHERRY
Delmar pattern
No. 5800 Doz $33 35
Height 4⅜ inches.

CORDIAL.
Delmar pattern.
No. 5801 Doz $31 70
Height 3¾ inches.

CORDIAL.
Golf pattern.
No. 5802 Doz $28 35
Height 3¼ inches.

SHERRY.
Golf pattern.
No. 5803 Doz $30 00
Height 4¾ inches.

COCKTAIL
Golf pattern.
No. 5804 Doz $35 00
Height 4½ inches.

WINE.
Golf pattern.
No. 5805 Doz $30 00
Height 4 inches.

CLARET.
Golf pattern.
No. 5806 Doz $35 00
Height 4¾ inches.

CHAMPAGNE.
Golf pattern.
No. 5807 Doz $40 00
No. 5808 With hollow stems, doz $50 00
Height 6½ inches.

GOBLET.—Golf pattern
No. 5809 Doz $48 35
Height 6 inches.

The above prices are subject to the regular discount.

GENTLEMEN'S 16 SIZE WATCH WORKS OR MOVEMENTS.

Stem winding and stem setting. We fit all cases to movements and regulate watches (no charge) before shipping.

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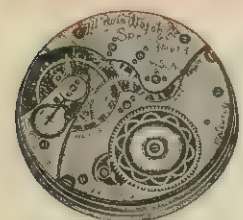
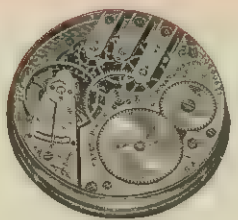


Springfield, Illinois Movement.

Nickel, 17 red jewels, adjusted to temperature, composition settings, compensation balance with timing screws, counterpoised fork and pallet, highly polished bevered center wheel, best quality Swiss Breguet hairspring, Philippe coil, patent micrometric screw regulator, concaved visible winding wheel, Swiss mainspring, double sunk dial, handsomely damaskeened, gold lettering. An attractive and well finished watch throughout.

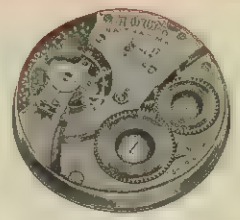
No. 9431 Hunting style. ... $28 20
No. 9432 Open Face style..... 28 20



Elgin Movement.

Nickel, 17 jewels, settings, exposed pallets, cut expansion balance, Breguet hairspring, micrometric regulator, display winding work, patent recoil ing click, patent self-locking setting device, sunk second dial, dust ring, damaskeened plates.

No. 9433 Hunting style $26 80
No. 9434 Open face style . . 26 80



Waltham Movement.

Nickel, 17 jewels (settings), exposed pallets, polished and red gilded center, wheel and jewel settings, cut expansion balance, patent micrometric regulator, patent Breguet hairspring hardened and tempered in form, tempered steel safety barrel, exposed winding wheels.

No. 9435 Hunting style $16 80
No. 9436 Open Face style..... 26 80

Elgin Movement.

Nickel, 17 jewels, gilded settings, adjusted to temperature, exposed pallets, compensating balance, Breguet hairspring, micrometric regulator, display winding work, patent recoiling click patent self-locking setting device, sunk second glass enamel dial, dust ring, damaskeened plates.

No. 9437 Hunting style.....$24 25
No. 9438 Open Face style . 34 25

P. S. Bartlett, Waltham Movement.

Nickel, 17 jewels, red gilded settings, exposed pallets, compensation balance, adjusted to temperature, patent Breguet hairspring hardened and tempered in form, patent micrometric regulator, tempered steel safety barrel, exposed winding wheels, red gilded center wheel

No. 9439 Hunting style .. $24 25
No. 9440 Open Face style... ... 24 25

Nameless movement same grade as above.

No. 9441 Hunting style..... $4 25
No. 9442 Open Face style 24 25

G. M. Wheeler Elgin Movement.

Nickel, 17 jewels, (gilded settings) adjusted to temperature, exposed pallets, compensating balance, Breguet hairspring, micrometric regulator, exposed winding wheels, patent recoiling click, patent self-locking setting device, double sunk dial, dust ring, engraving inlaid with gold, damaskeened plates.

No. 9443 Hunting style. $37 25

No. 9444 Open Face style..... $7 25

Waltham Royal Movement.

Nickel, 17 jewels, red gold settings, red gold center wheel, exposed pallets, patent micrometric regulator, compensation balance, adjusted to temperature, patent Breguet hairspring hardened and tempered in form, tempered steel safety barrel, exposed winding wheels.

No. 9445 Hunting style $40 95

No. 9446 Open Face style 40 95

Springfield, Ill., Movement.

Nickel, 17 red ruby jewels, composition settings, adjusted to temperature and four positions, carefully timed, compensation balance, timing screws, finely finished bevel ed train, polished gold center wheel, counterpoised fork and pallet, best quality Swiss Breguet hairspring, Philippe coil, patent micrometric screw regulator, concaved visible winding wheel, Swiss mainspring, double sunk enameled dial, elaborately damaskeened, gold lettering, gilt regulator and screws. A thoroughly finished watch throughout.

No. 9447 Hunting style . $37 00
No. 9448 Open Face style 37 00

Elgin Movement.

Nickel, 17 jewels, gilded settings, adjusted to temperature, quick train, with gold center wheel, straight line escapement, exposed pallets, compensation balance, Breguet hairspring, micrometric regulator, display winding work, patent recoiling click, patent self-locking setting device, double sunk glass enamel dial, dust ring, engraving inlaid with gold, frosted and damaskeened plates, carefully timed and finely finished throughout.

No. 9449 Hunting style only $52 10

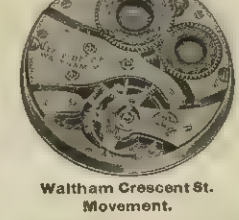
(This movement not made in Open Face style.)

Elgin Movement.

Nickel, 17 rosy ruby jewels (gold settings), adjusted to temperature, isochronism and positions, quick train with gold wheels, straight line escapement with steel escape wheel, exposed pallets, compensating balance, Breguet hairspring, micrometric regulator, display winding work, patent recoiling click, patent self-locking setting device, double sunk glass enamel dial, dust ring, engraving inlaid with gold, frosted and damaskeened plates, carefully timed and finely finished throughout

No. 9450 Hunting style only $55 50

(This movement not made in Open Face style.)

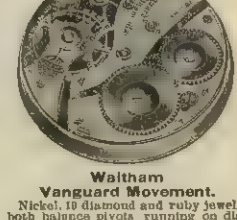


Waltham Crescent St. Movement.

Nickel, 21 fine ruby jewels, raised gold settings, jewelled main wheel bearings, jewel pin set without shellac, double roller escapement, steel escape wheel, exposed sapphire pallets, compensation balance, adjusted to temperature, isochronism and five positions, patent Breguet hairspring hardened and tempered in form, patent micrometric regulator, tempered steel safety barrel, exposed winding wheels, double sunk dial.

No. 9451 Hunting style $78 35

No. 9452 Open Face style. 78 35



Waltham Vanguard Movement.

Nickel, 19 diamond and ruby jewels, both balance pivots running on diamonds, raised gold settings, jewelled main wheel bearings, jewel pin set without shellac, double roller escapement, steel escape wheel, exposed sapphire pallets, compensation balances, adjusted to temperature, isochronism and five positions, patent Breguet hairspring hardened and tempered in form, embossed gold patent micrometric regulator, tempered steel safety barrel, exposed winding wheels, elaborately finished nickel plates with gold lettering steel parts chamfered, double sunk dial

No. 9453 Hunting style . . $79 40
No. 9454 Open Face style ... 79 40

We guarantee all our Movements for the following years: 7 jewels 2 years, 11 jewels 4 years, 15 jewels 6 years, 16 jewels 7 years, 17 jewels 8 years, 19 jewels or over 10 years.

The above prices are subject to the regular discount

Gentlemen's 16 Size Watch Works or Movements.

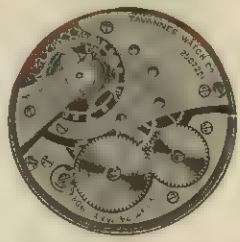
Stem winding and stem setting. We fit all cases to Movements and regulate watches (no charge) before shipping.

Prices quoted on this page are for the Works or Movements only. For Cases to fit any of the Movements shown on this page, see pages 21 to 36, inclusive (or Nos. 8562 to 8784, inclusive). Add the price of the Case wanted to that of the Movement desired, which will give you the price of the Complete Watch. When ordering Watches simply quote the number of Movement and Case wanted.

Trenton Movement.

New bridge model, stem wind, 7 jewels, nickel damaskeened, quick train, straight line escapement, exposed pallets, cut expansion balance, hardened and tempered Breguet hairspring, safety pinion, screw bankings, exposed polished steel winding wheels, dust band, Roman or Arabic white enamel dial, with monogram "T. W. Co." on dial and plate.

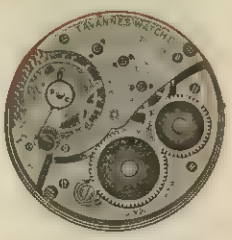
No. 9407 Hunting style $8 00
No. 9408 Open Face style 8 00



Tavannes Movement.

Nickel, ¾ plate, 7 jewels, compensating balance and hairspring, quick train, adjusted to heat and cold, pendant set.

No. 9409 Hunting style $8 86
No. 9410 Open face style 8 86



Tavannes Movement.

Nickel, ¾ plate, 15 jewels (3½ pairs in settings), compensating balance and hairspring, quick train, patent regulator, adjusted to heat and cold, pendant set.

No. 9411 Hunting style $15 75
No. 9412 Open Face style 15 75

Tavannes Movement.

Nickel, bridge model, 17 jewels, compensating balance and hairspring, quick train, patent regulator, adjusted to heat and cold, pendant set, double sunk glass enamel dial with marginal minutes.

No. 9413 Hunting style $28 25
No. 9414 Open Face style 28 25

Trenton Movement.

Bridge model 15 jewels, 4 pairs in settings, micrometer regulator, nickel damaskeened, quick train, straight line lever escapement, exposed pallets, cut expansion balance, hardened and tempered Breguet hairspring, safety pinion, screw bankings, exposed polished steel winding wheels, dust band, Roman or Arabic depressed center and second white enamel dial and red marginal figures, with monogram "T. W. Co." engraved on dial and plate.

No. 9415 Hunting style $13 35
No. 9416 Open Face style 13 35

Elgin Movement.

Nickel, 7 jewels, quick train, straight line escapement, exposed pallets, cut expansion balance, Breguet hairspring, polished regulator, display winding work, patent self-locking setting device, sunk second dial, dust ring, damaskeened plates.

No. 9417 Hunting style $14 90
No. 9418 Open Face style 14 90

Waltham Movement.

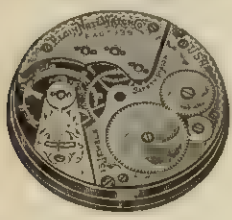
Nickel, 7 jewels, exposed pallets, cut expansion balance, patent Breguet hairspring, hardened and tempered in form, tempered steel safety barrel, exposed winding wheels.

No. 9419 Hunting style $14 90
No. 9420 Open Face style 14 90

Springfield, Illinois, Movement.

Nickel, 11 jewels, composition settings, compensation balance, timing screws counterposed fork and pallet, best quality Swiss Breguet hairspring, Philippe coil, patent micrometric screw regulator, Swiss mainspring, sunk second dial, visible winding wheel, damaskeened in attractive pattern

No. 9421 Hunting style $15 65
No. 9422 Open Face style 15 65



Elgin Movement.

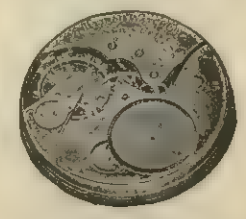
Nickel, three-quarter plate, 15 jewels, settings, exposed pallets, cut expansion balance, Breguet hairspring, micrometric regulator, display winding work, patent self locking setting device, sunk second dial, dust ring, damaskeened plates.

No. 9423 Hunting style $20 85
No. 9424 Open Face style 20 85

Springfield, Illinois, Movement.

Nickel, 17 red jewels, composition settings, compensation balance with timing screws, counterpoised fork and pallet, highly polished beveled center wheel, best quality Swiss Breguet hairspring, Philippe coil, patent micrometric screw regulator, concaved visible winding wheel, Swiss mainspring, double sunk dial, handsomely damaskeened, gold lettering. An attractive and well finished watch throughout.

No. 9425 Hunting style $24 60
No. 9426 Open Face style 24 60



Springfield, Illinois, Movement.

Nickel, 15 red jewels, composition settings, compensation balance, timing screws, highly polished beveled center wheel, counterpoised fork and pallet, best quality Swiss Breguet hairspring, Philippe coil, patent micrometric screw regulator, visible winding wheel, Swiss mainspring, double sunk dial, handsomely damaskeened. A well finished watch throughout.

No. 9427 Hunting style $20 85
No. 9428 Open Face style 20 85

Waltham Movement.

Nickel, 15 jewels, settings, exposed pallets, polished and red gilded center wheel and jewel settings, cut expansion balance, patent micrometric regulator, patent Breguet hairspring hardened and tempered in form, tempered steel safety barrel, exposed winding wheels

No. 9429 Hunting style $20 85
No. 9430 Open Face style 20 85

We guarantee all our Movements for the following years: 7 jewels, 2 years; 11 jewels, 4 years; 15 jewels, 6 years; 16 jewels, 7 years; 17 jewels, 8 years; 19 jewels and over, 10 years.

The above prices are subject to the regular discount.

GENTLEMEN'S 18 SIZE WATCH WORKS OR MOVEMENTS.

Stem winding and stem setting. We fit all cases to movements and regulate watches (no charge) before shipping.

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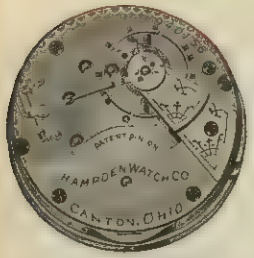


Dueber-Hampden Movement.

Nickel, 11 jewels, patent center pinion, elegantly engraved and damaskeened, spade hands, sunk second dial, patent regulator and regular "Hampden" mainspring.

No. 9339 Hunting style ...$10 80
No. 9340 Open Face style..... 10 80

Waltham Movement.

Gilded, 15 jewels, settings, exposed pallets, cut expansion balance, patent Breguet hairspring, hardened and tempered in form.

No. 9341 Hunting style $13 40
No. 9342 Open Face style 13 40

Waltham Movement.

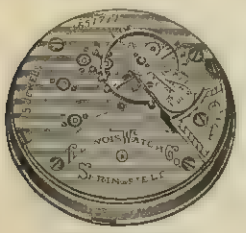
Nickel, 15 jewels, settings, exposed pallets, cut expansion balance, highly finished oval regulator, polished and gilded index plate, patent regulator, Breguet hairspring, hardened and tempered in form.

No. 9343 Hunting style $14 90
No. 9344 Open Face style 14 90

Elgin Movement.

Nickel, 15 jewels, settings, quick train, right angle escapement, exposed pallets, cut expansion balance, Breguet hairspring, polished oval regulator, nickel index, dust ring, damaskeened plates.

No. 9345 Hunting style $14 90
No. 9346 Open Face style 14 90



Springfield, Illinois, Movement.

Nickel, 15 jewels, composition settings, compensation balance, four timing screws, best quality Swiss Breguet hairspring, patent micrometric screw regulator, sunk second dial.

No. 9347 Hunting style . $14 10
No. 9348 Open Face style 14 10

Dueber Hampden Movement.

Nickel, 15 jewels, in composition settings, Breguet hairspring, patent regulator, sunk second dial, Roman figures, moon hands, patent center pinion, bright flat screws, elegantly engraved and damaskeened and the regular "Hampden" mainspring.

No. 9349 Hunting style... . . $13 20
No. 9350 Open Face style . . 13 20

Springfield, Illinois, Movement.

Nickel, 17 jewels, composition settings, compensation balance, four timing screws, best quality Swiss Breguet hairspring, patent micrometric screw regulator, sunk second dial.

No. 9351 Hunting style $16 70
No. 9352 Open Face style .. . 16 70

Waltham Movement.

Nickel, 17 jewels, settings, exposed pallets, cut expansion balance, patent Breguet hairspring hardened and tempered in form, highly finished oval regulator, polished and gilded index plates.

No. 9353 Hunting style $17 85
No. 9354 Open Face style 17 85

Elgin Movement.

Gilded, 17 jewels, settings, adjusted to temperature, quick train, straight line escapement, exposed pallets, compensation balance, Breguet hairspring, micrometric regulator, sunk second dial, dust band.

No. 9355 Hunting style. $17 85
No. 9356 Open Face style 17 85

Waltham Movement.

Gilded, 17 jewels, settings, exposed pallets, compensation balance, adjusted patent micrometric regulator, patent Breguet hairspring hardened and tempered in form.

No. 9357 Hunting style $17 85
No. 9358 Open Face style . 17 85

Springfield, Illinois, Movement.

Nickel, 17 red jewels, adjusted, composition settings, compensation balance, safety pinion, four timing screws, best quality Swiss Breguet hairspring, Philippe coil, double sunk dial, patent micrometric screw regulator, Swiss mainspring, handsomely damaskeened with gold lettering. A well-finished watch throughout.

No. 9359 Hunting style... .....$21 95
No. 9360 Open Face style. 21 95

Dueber-Hampden, Dueber-Grand Movement.

Nickel, 17 jewels in composition settings, adjusted, Breguet hairspring, patent regulator, bright flat screws, elegantly engraved and damaskeened, Arabic or Roman dial, red margins, figures, moon hands.

No. 9361 Hunting style... . . $19
No. 9362 Open Face style 19 20

All our movements are guaranteed for the following years: 7 jewels, 2 years; 11 jewels, 4 years; 15 jewels, 6 years; 16 jewels, 7 years; 17 jewels, 8 years; 19 jewels and over, 10 years.

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GENTLEMEN'S 18 SIZE WATCH WORKS OR MOVEMENTS.

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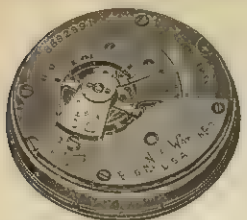
Prices quoted on this page are for the WORKS or MOVEMENTS ONLY. For CASES to fit any of the Movements shown on this page, see pages 3 to 20, inclusive (or No. 8300 to No. 8561, inclusive).

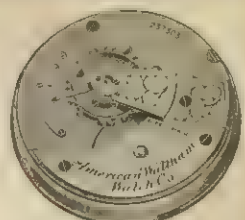
Add the price of the CASE wanted to that of the MOVEMENT desired, which will give you the price of the COMPLETE WATCH. When ordering Watches simply quote the NUMBER OF MOVEMENT AND CASE wanted.



Elgin Movement.

Gilded, 7 jewels, exposed pallets, cut expansion balance, Breguet hairspring, polished oval regulator, sunk second dial, gilded index, dust ring.

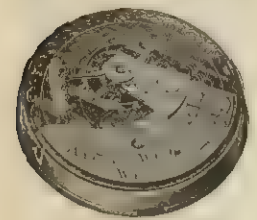
No. 9305 Hunting Style $10 40
No. 9306 Open Face style 10 40



Waltham Movement.

Gilded, 7 jewels, exposed pallets, cut expansion balance, patent Breguet hairspring hardened and tempered in form, highly finished oval regulator, polished index plate.

No. 9307 Hunting style..... $10 40
No. 9308 Open Face style..... 10 40



Waltham Movement.

7 jewels, settings, exposed pallets, compensation balance, highly finished oval regulator, polished and gilded index plate, patent Breguet hairspring hardened and tempered in form.

No. 9309 Hunting style $11 90
No. 9310 Open Face style 11 90

Elgin Movement.

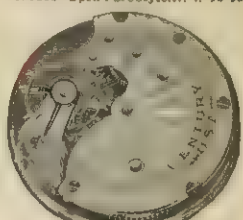
Nickel, 7 jewels, quick train, right angle escapement, straight line escapement, exposed pallets, compensating balance, Breguet hairspring, polished oval steel regulator, nickel index, dust ring, damaskeened plates

No. 9311 Hunting style $11 90
No. 9312 Open Face style. 11 90

Dueber-Hampden Movement.

Gilt, 7 jewels, expansion balance, patent center pinion, spade hands, sunk second dial and regular "Hampden" mainspring.

No. 9313 Hunting style. $9 00
No. 9314 Open Face style 9 00



Seth Thomas Century Movement.

Made by Seth Thomas, lever setting, ¾ plate, 7 jewel, quick train, nickel finish, damaskeened, hard enamel dial with depressed seconds, the latest and best American low-price watch movement made.

No. 9315 Hunting style $4 40
No. 9316 Open Face Style 4 40

New York Standard Movement.

Nickel damaskeened or gilt, 7 jewels, train bearings in metal settings, quick train, compensation balance, Breguet hairspring, stem wind, lever set, white enamel dial.

No. 9317 Hunting style $4 50
No. 9318 Open Face style..... 4 50

Locomotive Special Movement.

Elaborately damaskeened, nickel and gilt movement, ruby jewels in raised settings, quick train, straight line lever escapement, exposed pallets, compensation balance, screw bankings, hard white enamled dial, patent micrometer regulator, hardened and tempered hairspring, locomotive on movement and dial, and movement stamped "23 Jewel's Adjusted;" equals appearance of $25.00 railroad movement.

No. 9319 Hunting style $8 00
No. 9320 Open Face style 8 00

Train Dispatcher (marked on dial).

Missouri Pacific (on plate).

Nickel, highly jeweled (settings), fancy gilt lettering and damaskeened, patent regulator, plate marked specially adjusted, extra quality, highly jeweled, Missouri Pacific, gilt metal frame over a richly colored enamel dial, showing colored numerals in panels, fancy hands, lever escapement, lever set.

No. 9321 Hunting style $6 70
No. 9322 Open Face style 6 70

Same movement with rich, fancy colored enamel dial.

No. 9323 Hunting style 6 40
No. 9324 Open Face style 6 40

Same movement with plain white dial.

No. 9325 Hunting style 6 30
No. 9326 Open Face style. 6 30

Marvin Watch Co.'s "U. P." Flyer.

Nickel, full plate, 11 jewels in settings (imitation 17 jeweled), fancy damaskeened, patent regulator, marked adjusted, plain dial, lever set, furnished with or without the locomotive printed on dial and plates, lever escapement.

No. 9327 Hunting or Open Face..$5 50
No. 9328 With metal frame, colored enamel panel dial..... 6 15
No. 9329 Fancy gilt damaskeened, plain dial 5 60
No. 9330 Fancy gilt damaskeened with fancy dial 5 90

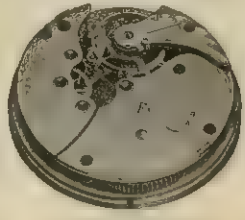
Marvin Watch Co. Movement.

18 size, named "Marvin Watch Co.," double plate, sunk balance, 11 jewels in settings, (imitation 17 jeweled), fancy damaskeened, patent regulator, marked adjusted, lever set, stem wind, Open Face or Hunting, white dial.

No. 9331 Nickel, Hunting style $6 30
No. 9332 Nickel, Open Face " 6 30

Gilt Damaskeened.

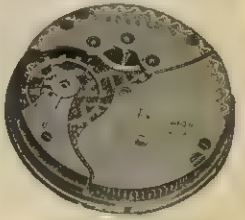
No. 9333 Hunting style $6 40
No. 9334 Open Face style 6 40



Excelsior Movement.

Nickel damaskeened, 7 jewels, cut expansion balance, Breguet hairspring, white enamel dial

No. 9335 Hunting style $5 55
No. 9336 Open Face style 5 35



Excelsior Movement.

Nickel damaskeened, 10 jewels, cut expansion balance, Breguet hairspring, white enamel dial.

No. 9337 Hunting style.....$6 70
No. 9338 Open Face style..... 6 70

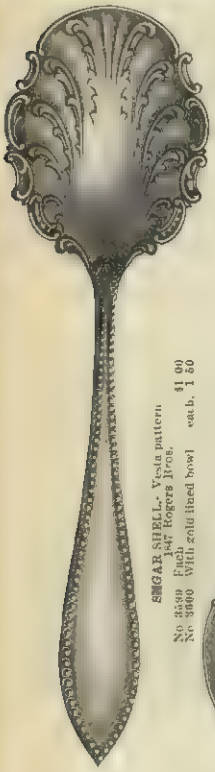
WE GUARANTEE ALL MOVEMENTS FOR THE FOLLOWING YEARS: 7 jewels, 2 years; 11 jewels, 4 years; 15 jewels, 6 years; 16 jewels, 7 years; 17 jewels, 8 years; 19 jewels or over, 10 years.

The above prices are subject to the regular discount.

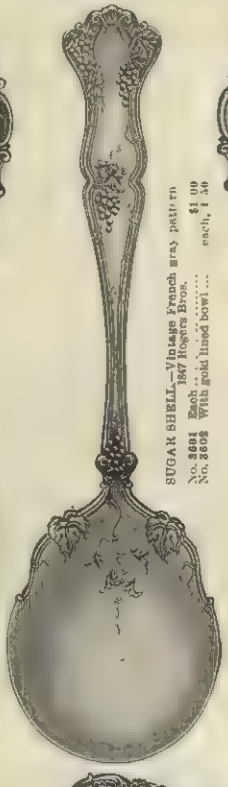
1847 ROGERS BROS.

High Grade Silver Plated Sugar Shells.

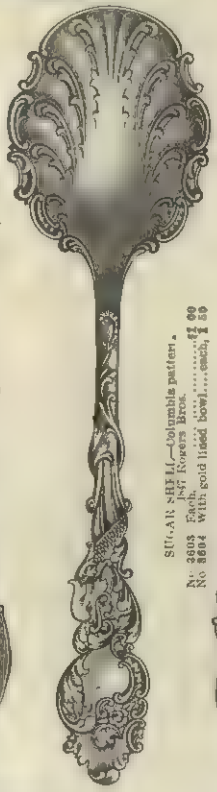
Illustrations shown are full size.



SUGAR SHELL.—Vista pattern
1847 Rogers Bros.
No. 3599 Each $1 00
No. 3600 With gold lined bowl ..... each, 1 50

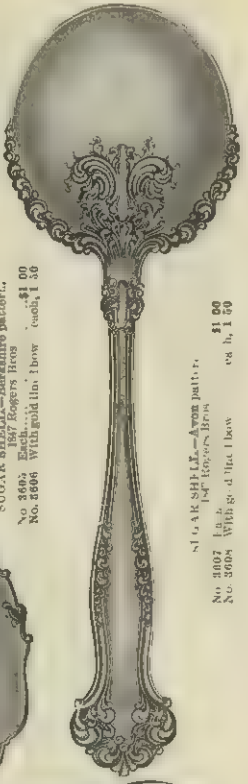


SUGAR SHELL.—Vintage French gray pattern
1847 Rogers Bros.
No. 3601 Each $1 00
No. 3602 With gold lined bowl .... each, 1 50



SUGAR SHELL.—Columbia pattern.
1847 Rogers Bros.
No. 3603 Each $1 00
No. 3604 With gold lined bowl.....each, 1 50

SUGAR SHELL.—Berkshire pattern.
1847 Rogers Bros.
No. 3605 Each $1 00
No. 3606 With gold lined bowl ..... each, 1 50

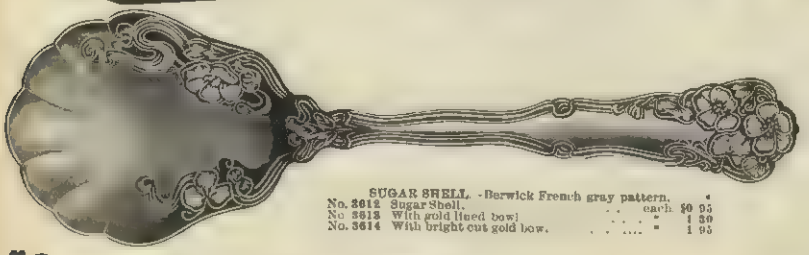


SUGAR SHELL.—Avon pattern.
1847 Rogers Bros.
No. 3607 Each $1 00
No. 3608 With gold lined bowl ..... each, 1 50

"Eagle Brand"

SUGAR SHELL.—Yale pattern

No. 3609	Sugar Shell	each,	$0 95
No. 3610	With gold lined bowl	"	1 40
No. 3611	With bright cut gold bowl	"	1 95

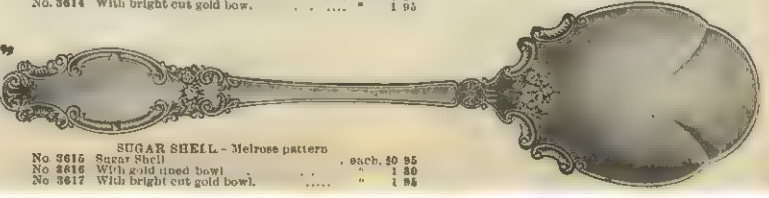


W. Rogers "Eagle Brand" Wallingford

SUGAR SHELL.—Berwick French gray pattern.

No. 3612	Sugar Shell	each	$0 95
No. 3613	With gold lined bowl	"	1 30
No. 3614	With bright cut gold bow.	"	1 95

"Eagle Brand"



The above prices are subject to the regular discount.

SUGAR SHELL.—Melrose pattern

No. 3615	Sugar Shell	each,	$0 95
No. 3616	With gold lined bowl	"	1 30
No. 3617	With bright cut gold bowl.	"	1 95

ruts so that the geared front wheel first hurries as it drops into the rut, and then hesitates as it climbs out, thus greatly varying the speed of this one wheel which drives the instrument, the index does rise and fall, thus correctly indicating the actual velocities of the driving wheel. A drive of a few miles on a car having a short wheel-base, over the roughest streets that could be found, showed the index standing steadily, save in case of deep ruts with very slow speed, which gave correct fluctuations in the pace readings

New Rambler Models

Two new Rambler models have just been brought out by Thomas B. Jeffery & Co., Kenosha, Wis. They are equipt with the same type rear axle and transmitting mechanism which have met with such success on Model 24. The new models are known respectively as Models 147 and 245

Model 147 is designed to meet the demand for a reliable four-cylinder touring car with comfortable seating capacity for five and sufficient power to permit travel on ordinary country roads

The motor is a 4-cylinder 4½ in. bore and stroke, and develops 20 to 25 H. P. The cylinders are cast separate. The crank case is of special aluminum alloy. The rear axle is identical to that used on Model 24. The axle housing is heavy seamless steel tubing made integral by a special process, with the aluminum differential housing

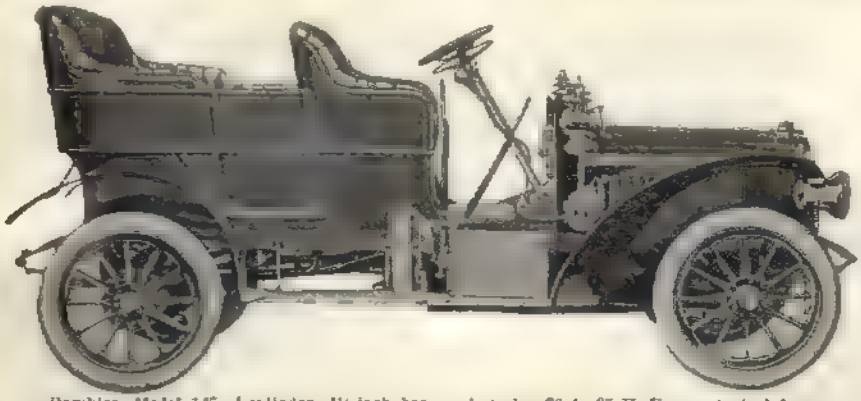
The frame is of prest steel with strongly braced cross girders securely riveted in place The rear springs are full elliptic and the front semi-elliptic. The differential is of the spur gear type

The clutch is of the cone type, leather-faced with a ball bearing to take the spring thrust. All tendency of the clutch to bind or to get out of line is removed by a double universal joint located between the clutch and the transmission. The transmission gear is of the new Rambler progressive sliding gear type, located on the forward end of the propeller shaft, thus dispensing with the usual universal clutch between speed change gears and propeller shaft.

Control is by tilting wheel beneath the steering wheel, which regulates the throttle, and a ratchet lever for the spark. Two brakes are provided, one, consisting of expanding rings, acting on the inside of the rear wheel hub drums, is operated by a pedal; the other, constrictive bands acting upon the exterior diameter of the hub drums is operated by a lever

The body is well and strongly made. The frame work is seasoned ash braced with angle steel. Seat backs are made of sheet steel. The finish is an attractive shade of royal blue, striped with a fine gold line

The price of the Rambler 147 is $1750, including cape top with full equipment of side curtains and storm apron.



Rambler Model 147, 4-cylinder, 4½ inch bore and stroke 20 to 25 H. P.; prest steel frame, full elliptic springs rear semi elliptic front, spur gear differential new Rambler transmission Price $1750, including cape top

Ignition is by jump spark, for which current is furnished by a 6-volt 60-ampere storage battery used in conjunction with a standard four-unit vibrator coil on the dash The timer is of their own design and is so arranged that the terminal posts for the wires are stationary and the wires consequently do not move as the spark is advanced or retarded, and the tendency of the wires to loosen and break is accordingly minimized

Lubrication for the motor is provided by a five-feed mechanical oiler placed on the dash. The transmission and differential are oil tight and can be filled with oil. Other parts are lubricated by hard grease cups accessibly located.

Model 245 is identical in every respect with their Model 24, described in our March, 1907, issue, page 129, except speed change gears, final drive and rear axle construction.

The rear axle is the floating type with the road wheels running on roller bearings, the inner members of which are seated on the extreme end of the axle housing The inner ends of the shafts are supported in the differential and carried on roller bearings.

The equipment includes full cape top with side curtains and storm apron, parabolens gas headlights with separate generator, oil side and tail lights, horn, pump, wrenches and tire kit. Price, $2500.

MEASURING TAPES.

AJAX ASSES' SKIN.

Brass Bound, Green Enameled Case, with Folding Handle
Pale Blue Cotton Tape, ½ Inch Wide.

Nos.	30	31	32	33
Length,	25	30	40	50
Wt. per doz.,	2	2½	4	5
Per dozen,	$3.75	4.00	4.50	5.00
Nos.	34	35	36	37
Length,	60	75	80	100
Wt per doz.,	3½	4½	5	6 lbs
Per dozen,	$6.00	7.50	8.00	9.00

HALF DOZEN IN A BOX

LUFKIN METALLIC.

Hard Leather Case, Brass Trimmings, ½ Inch Woven Linen T Metallic Warp, Marked in 12ths.

Nos.	500L	503L	504L	505L	506L
Length,	25	50	66	75	100 ft.
Wt. per doz.,	8	11	12	13	17 lbs
Per dozen,	$26.50	31.00	36.00	39.50	50.00

Hard Leather Case, Brass Trimmings, ½ Inch Woven Linen Tape with Metallic Warp, Marked in 10ths.

Nos.	504DL	504DL
Length,	50	66 ft
Wt. per doz.,	10	12 lbs.
Per dozen,	$3 20	36.00

HALF DOZEN IN A BOX.

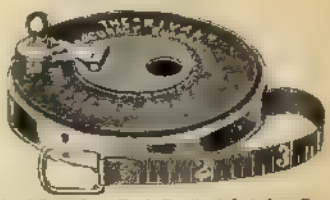
PATENT LEATHER.

Patent Leather Case, with Folding Handle. Best Cotton Tape, ½ Inch Wide.

Nos.	43	45	46	47	48
Length,	50	66	75	80	100 ft
Wt per doz.,	3½	4½	5½	6	7½ lbs.
Per dozen,	56.25	7.25	8.75	9.25	10.75

HALF DOZEN IN A BOX.

RIVAL STEEL.



Nickel Plated Brass Case, Flush Handle, ½ Inch Steel Tape, Marked in 12ths.

Nos.	240	245	245	250
Length,	25	50	75	100 ft.
Weight,	½	½	1	1¼ lbs
Each,	$2.75	3.40	4.50	5.75

ONE IN A BOX

CHESTERMAN'S METALLIC

Natural Color, Leather Case, Wired Linen Tape, ½ Inch Wide, in 10ths or 12ths.

No. 34L—Feet,	50	66	75	100
Weight,	¾	1	1¼	1½ lbs
Each,	$2.50	3.00	3.30	4.20

ONE QUARTER DOZEN IN A BOX.

CHESTERMAN'S STEEL.

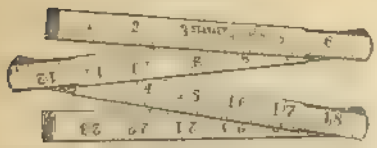
Natural Color, Leather Case, Flush Handle, Steel Tape ½ Inch Wide, Marked in 12ths.

No. 36L—Feet,	50	66	75	100
Weight,	¾	1	1¼	1½ lbs.
Each,	$7.20	9.20	10.40	12.90

ONE QUARTER DOZEN IN A BOX.

RULES.

ZIGZAG.



Stanley's, Boxwood Stained, Nickel Plated Steel Joints and Tips.

Nos.	02	03	04	05	06	08
Feet	2	3	4	5	6	8
Wt per doz	1	1½	2	2½	3	4 lbs
Per dozen	$2.00	3.00	4.00	5.00	6.00	8.00

HALF DOZEN IN A BOX

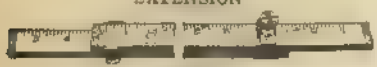
Stanley's, White Enameled, Brass Joints and Tips

Nos.	103	104	105	106	108
Length,	3	4	5	6	8 ft.
Wt per doz.,	2	2½	3	3½	4½ lbs.
Per dozen,	$3.75	5.00	6.25	7.50	10.00

These rules are made of flexible hard wood, each joint containing a stiff spring which holds the rule rigid when open. As shown in cut there is no hole through the joint where the joint is attached. The method of construction adds greatly to the strength of the rule

HALF DOZEN IN A BOX

EXTENSION



Stanley's

No. 604 [illegible] and rigid brass set screw, ¾ in. wide, wt per doz 7½ lbs per dozen, [illegible] $8.00

EXTENSION ZIGZAG

Stanley's.

No. 6[illegible] 4 ft. boxwood stained brass [illegible] and tips, marked in 8ths and [illegible] wt 2½ lbs. [illegible] per doz. per dozen [illegible] $7.00

No. 206— 6 ft. boxwood stained, brass joints, slides and [illegible] 3 ½ lbs. [illegible] per dozen [illegible] 9.00

These rules have all the advantages of the regular 2-fold rules, and in addition have at one end an extension slide, by the use of which exact inside measurements may be easily obtained. When using the slide [illegible] or to these the exact measurements shown on the [illegible] give the distance between. When the end of each part is [illegible] which keeps the sections from rubbing and prevents the [illegible] wear.

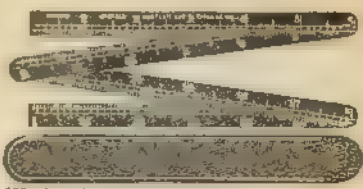
HALF DOZEN IN A BOX

SHIP CARPENTERS' BEVELS.

No. 42—1 ft., boxwood, 2 brass ringers, brass tipped, marked in 8ths and 16ths in., width 1½ in. per dozen $4.00

ONE DOZEN IN A BOX WEIGHT 5½ LBS. PER DOZEN

FOLDING POCKET.



No. 202—2 ft., bluec steel, four fold, marked on both sides in 8ths and 16ths in., ½ in wide, leather case, per dozen, $7.00

ONE DOZEN IN A BOX WEIGHT 1 LB PER DOZEN

STEEL MACHINISTS'

Flexible 10th Graduation, 32nds and 64ths, on One Side Only.

No. 10— Inches,	3	4	6	9	12
Wt per doz	2	2½	4	6	7½ oz
Per dozen,	$3.00	4.20	5.40	8.40	10.80

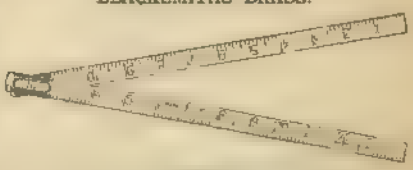
HALF DOZEN IN A BOX

Tapered, End Graduations, 4th Graduations, One Side 8ths and 10ths, Other Side 32nds and 64ths.

No. 4 Inches,	1	3	3	4	6	9	12
Wt per doz	2	3½	6	7½	13½	23	35
Per dozen,	$1.80	2.40	3.60	4.80	6.00	9.60	12.00

HALF DOZEN IN A BOX

BLACKSMITHS' BRASS.



No. 17—2 ft. Stanley's [illegible] spring brass, two fold, marked in 8ths and 16ths in. ½ in. wide per dozen $5.00

HALF DOZEN IN A BOX WEIGHT 3 LBS PER DOZEN

PATTERN MAKERS' SHRINKAGE.

Stanley's, Boxwood, Brass Tips, 24x1½ Inch.

No. 38½ Shrinkage, per ft	⅛	¼	⅜	½ in.
Per dozen	$18.00	18.00	18.00	18.00
No. 30½ - Shrinkage, per ft.	⅛	¼	⅜	½ in.
Per dozen,	$18.00	18.00	18.00	18.00

HALF DOZEN IN A BOX WEIGHT 2 LBS PER DOZEN

BANJOS.

Nos. 980-981.

Nos. 996-998.

Nos. 91109-91124.

Nos. 9109-9124

8 INCH.

No. 980 Maple Shell with nickel band, imitation cherry neck, calfskin head, 6 screw brackets.....each, $3 85

10 INCH.

No. 981 Maple Shell with nickel band, imitation cherry neck, calfskin head, 6 screw brackets.....each, $5 55
No. 91196 Nickel Shell, wood-lined, stained imitation cherry neck, 7 nickel plated hexagon brackets, calfskin head..... " 7 20
No. 91198 Same description as No. 91196, 9 nickel plated hexagon brackets..... " 7 55

Our Own Manufacture.

No. 996 Nickel Shell, wood-lined, stained imitation cherry neck, 7 nickel plated hexagon brackets No. 37, calfskin head.....each, $8 70
No. 998 Same description as No. 996, with 9 nickel plated hexagon brackets No. 37..... " 9 10

11 INCH.

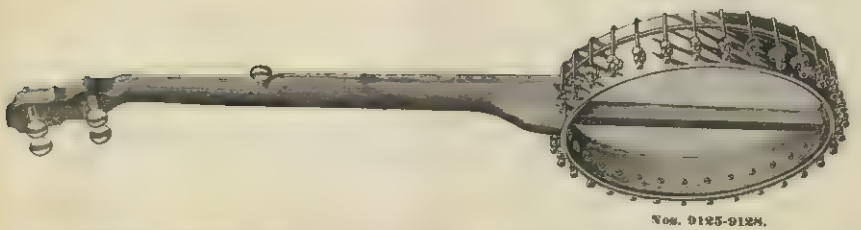
Nickel Shells, Wood-Lined, Calfskin Heads.

No. 91109 13 nickel plated hexagon brackets, raised frets, birch neck.....each, $ 9 20
No. 91110 17 " " "

BANJOS

Nos. 9500-9504.

No. 937 Bracket.



Nos. 9125-9128.

Nickel shells. Wood lined. Both edges wired. Nicely finished birch necks. Imitation ebony veneered finger-boards. Position dots. Raised frets. White celluloid pegs. Calfskin heads

No. 9125	11 inch,	17	nickel plated hexagon brackets	No. 937			each,	$18 20
No. 9127	11 "	25	" " "	937			"	19 20
No. 9128	11 "	31	" " "	937			"	19 70
No. 9130	11½ "	17	" " "	937, 9-inch neck, 22 frets			"	38 70

THE IMPROVED MYSTIC.

Nickel shell. Both edges wired. Wood-lined. Heavy rabbeted straining hoop. Highly polished birch necks. Ebony finger-boards inlaid with pearl and metal. Patent tail-pieces. Raised frets. White celluloid pegs. Fine calfskin heads.

No. 9500	10½ inch,	21	nickel plated brackets	No. 937, 19-inch neck, 22 frets.			each,	$23 35
No. 9501	11 "	25	" " "	No. 937			"	24 30
No. 9502	11 "	25	" " "	No. 937, richly inlaid finger-board, mahogany neck			"	30 10
No. 9503	11 "	31	" " "	No. 937, elaborately inlaid finger-board			"	35 85
No. 9504	11 "	31	" " "	No. 937, German silver shell, nickel plated, handsomely carved mahogany neck extra heavy finger-board beautifully inlaid with pearl			"	44 20
No. 9258	Mystic, 10-inch ladies' size, 25 brackets No. 937 mahogany neck						"	28 00

These Banjos are made with extra care, are handsomely ornamented, carefully adjusted, and are intended to supply the want of a well-made professional instrument at a medium price.

No. 9912.

No 944 Bracket.

10½-INCH GERMAN SILVER SHELLS.

NEW PROFESSIONAL BANJOS.

Nickel plated. Inside maple hoop. Polished. 19-inch necks. Raised frets. Extra heavy rabbeted straining hoop Patent tail-pieces. Extra heavy ebony finger-boards.

No. 9910	17 brackets No. 944, birch neck, calfskin head, pearl inlaid finger-board			each,	$34 50
No 9912	21 brackets No 944, mahogany neck handsomely carved, finger-board elaborately inlaid, fitted with Champion Aluminum patent pegs			"	47 65

10-inch LADIES' SIZE BANJOS.

No. 9211	Nickel shell, wood lined, plain birch neck, raised frets, 17 nickel hexagon brackets No. 937	each,	$13 40
No. 9228	" " " " wired edge, fine birch neck, imitation ebony finger-board, position dots, raised frets, 21 nickel hexagon brackets No. 937	"	16 20

8-inch PICCOLO BANJOS.

No. 9309	Nickel shell, wood-lined, 7 nickel hexagon brackets No 937, birch neck, raised frets	each,	$10 85
No. 9320	" " " " wired edge, plain birch neck, raised frets, 9 nickel hexagon brackets No 937	"	13 10

The above prices are subject to the regular discount.

EXTRA QUALITY TELESCOPES.

THE FOLLOWING TELESCOPES ARE THE BEST QUALITY MADE.

No. 2800 Morocco covered body, polished brass slides and ends, with object-glass cap and sliding eye-piece cover

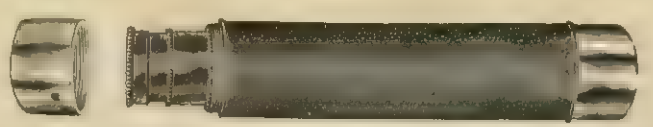
Object Glass	Draw	Length Closed	Length Drawn Out	Magnifying Power	Diameter of Body	Each
10 lignes	3	4⅜ inch	13½ inch	10 times	1 inch	$ 3 95
12 "	3	5¼ "	16½ "	12 "	1⅛ "	4 50
14 "	3	6¼ "	17 "	16 "	1¼ "	6 60
16 "	3	8 "	23 "	20 "	1⅝ "	8 15
19 "	3	9¾ "	29½ "	25 "	1⅞ "	10 95

No. 2805 Morocco covered body, polished brass slides, ends and sun shade, with cap and sliding eye-piece cover.

Object Glass	Draw	Length Closed	Length Drawn Out	Magnifying Power	Diameter of Body	Each
12 lignes	3	5⅜ inch	16½ inch	14 times	1¼ inch	$ 5 35
14 "	3	6¼ "	18 "	16 "	1⅜ "	6 75
16 "	3	8 "	23 "	20 "	1⅝ "	9 70
19 "	3	9¾ "	29½ "	25 "	2 "	12 60
22 "	4	10½ "	36⅜ "	30 "	2⅜ "	20 60
22 "	with extra eye-piece for astronomical work, giving power 50 diameters.					28 00

No. 2802 Braided twine cover to body, polished brass slides and ends, with cap and sliding eye-piece cover.

Object Glass	Draw	Length Closed	Length Drawn Out	Magnifying Power	Diameter of Body	Each
10 lignes	3	4⅜ inch	13½ inch	10 times	1 inch	$ 4 50
12 "	3	5¾ "	16½ "	12 "	1⅛ "	4 90
14 "	3	6½ "	17 "	16 "	1¼ "	6 30
16 "	3	8 "	23 "	20 "	1⅝ "	8 55
19 "	3	9¾ "	29½ "	25 "	1⅞ "	11 10



No. 2819 Extra quality morocco covered body, polished brass slides, with nickel plated caps over the end.

Object Glass	Draw	Length Closed	Length Drawn Out	Magnifying Power	Diameter of Body	Each
10 lignes	3	5¼ inch	14½ inch	10 times	1 inch	$5 35
12 "	3	6 "	16½ "	12 "	1⅛ "	6 05
14 "	3	7 "	18 "	16 "	1⅜ "	6 75

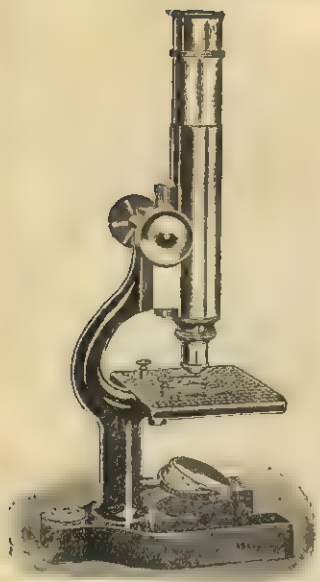
TOURIST TELESCOPE.

No. 2825.

	Each
No. 2825 "Rifle Range" telescope, with cap and straps, 4 draws. Diameter 22 lignes; length, when closed, 11 inches; when extended, 36 inches; power, 33 diameters; warranted to show in a clear atmosphere a bullet mark at 1,000 yards.	$44 80
No. 2825-A "Rifle Range" telescope, same as No. 2825 with astronomical eye-piece, increasing its magnifying power to 50 diameters.	56 00

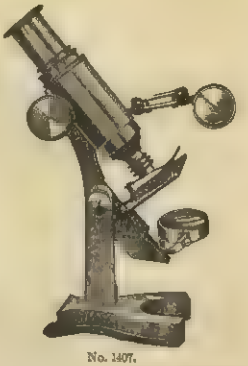
The above prices are subject to the regular discount.

MICROSCOPES.



No. A1. The Practical Microscope

No. 1401.



No. 1407.

No. 1403.

THE PRACTICAL MICROSCOPE.

This microscope is designed to meet the popular demand for a reliable, low-priced instrument. We can confidently recommend it to the jeweler or druggist as a salable instrument that will give perfect satisfaction. It is intended for the home circle and school purposes, being also specially adapted for many industrial purposes, such as the examination of starches, sugars, drugs, chemicals, leather, silks, fibers, fabrics of all kinds, pork for trichinæ, paper, paint, polishes, etc. It is especially useful for examining all foods, milk and water, intended for home consumption.

At any time other objectives may be added, increasing the power of the instrument, as all high grade lenses fit this instrument, which is made with the society screw.

No. A1 Microscope with 1 eyepiece and ¼-inch divisible objective, giving 44 to 155 diameters .... each $37 35
No. A3 Same as A1, but with 1-5 inch objective added, increasing magnification to 500 diameters.... " 53 35

BOYS' MICROSCOPES

No. 1400 Brass upright compound microscope, single lens objective, in mahogany box, with one mounted object, one pair tweezers, two glass slips .....each $3 35

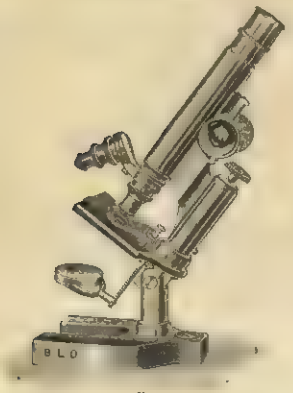
No. 1401 Brass upright compound microscope, triple lens objective, separable, giving three different powers, viz., 35 diameters for examining larger objects, and 30 and 50 diameters for smaller objects; in mahogany box, one mounted object, one pair tweezers, two glass slips .....each 4 35

No. 1402 Brass compound microscope, mounted on jointed iron foot, so that it can be inclined to an angle, two lenses giving powers of 30 and 50 diameters respectively; mahogany box, one mounted object, one pair tweezers, two glass slips .....each 5 70

No. 1405 Brass compound microscope, mounted on jointed iron foot, allowing inclinations to any angle, triple lens separable, giving powers of 35 to 100 diameters; mahogany box, mounted object, tweezers, two glass slips.....each 10 70

No. 1406 Same as 1405, but with condensing lens in front for illuminating opaque objects. Each 11 35

No. 1407 Same as 1405, but with condensing lens and with rack and pinion for adjusting to focus .....each 15 35



B

BAUSCH & LOMB CONTINENTAL MICROSCOPE.

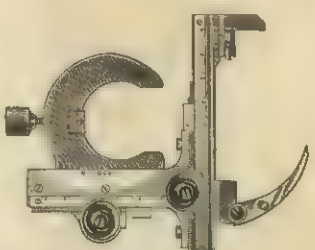
The B microscope combines those features which make an instrument most useful for student work where low and medium powers are required. It has our regular diagonal rack and pinion coarse adjustment, standard micrometer screw fine adjustment, joint for inclination and draw tube with society screw. The stage is oxidized metal and is provided with revolving diaphragm with apertures of various diameters. Plane and concave mirrors mounted on an adjustable arm give control of the illumination.

This instrument is very durably made and neatly finished, in addition its simplicity of construction makes it desirable for young students. For these reasons it has found its way into a large number of high school and college laboratories.

Furnished in polished cherry case with handle and lock.

PRICE LIST

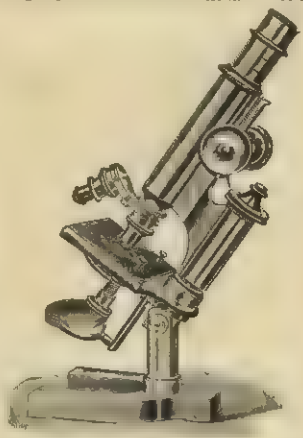
Catalogue No.	Objectives, Dry	Eyepieces	Nosepiece	Price.
B 1	2-3, 1-6	1 in.		$ 93 35
B 2	2-3, 1-6	1 in.	Double.	106 70
B 3	2-3, 1-6	2 in. 1 in.		98 70
B 4	2-3, 1-6	2 in. 1 in.	Double.	112 00



ATTACHABLE MECHANICAL STAGE.

New construction; attachable to any microscope, of Continental pattern; rack and pinion movements of extraordinary range, being 35 and 60 mm., respectively. The millimeter graduations permit the slide being systematically searched and any point accurately recorded. Adjustable stop and freely movable finger admit use of slides of various sizes. This stage should form part of every outfit.

No. 2134 Attachable Mechanical stage, in velvet lined morocco case .....each $48 00



BB

BAUSCH & LOMB CONTINENTAL MICROSCOPE.

The BB is our most popular microscope.

The stand is of brass throughout to stage, base is lacquered with black acid and alcohol proof lacquer. The joint has steel stops for holding the body parallel with base when photographing. The screw substage permits the use of condenser and has iris diaphragm working in the plane of the stage. The mirrors, plane and concave, are extra large.

Course adjustment is by standard rack and pinion; fine adjustment by micrometer screw with graduated screw head. Has nickeled draw tube graduated in millimeters and sliding in cloth lined sleeve.

The BC microscope has complete substage, add $6 70, for BC 1, 2 and 4, and $10 00 for BC 7 and 8, respectively, to prices for the same BB outfits.

Each BB and BC microscope is furnished in polished wood carrying case with handle and lock.

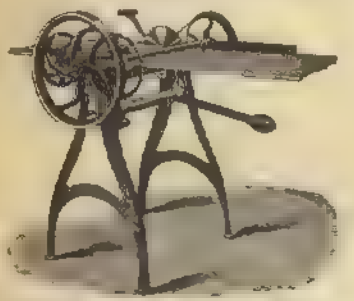
PRICE LIST.

Catalogue No.	Objectives	Eyepieces	Nose piece	Abbe Cond'n'r	Price.
BB 1	2-3, 1-6	1 in.			$128 00
BB 2	2-3, 1-6	1 in.	Double		141 35
BB 3	2-3, 1-6	2 in. 1 in.			133 35
BB 4	2-3, 1-6	2 in. 1 in.	Double		146 70
BB 5	2-3, 1-6	1 in.	Triple	1-20 N. A.	168 00
BB 6	2-3, 1-6	2 in. 1 in.	Triple	1-20 N. A.	174 35
BB 7	2, 1, 1-6, 1-12	2 in. 1 in.		1-20 N. A.	248 00
BB 8	2, 1, 1-6, 1-12	2 in. 1 in.	Triple	1-20 N. A.	267 70

The above prices are subject to the regular discount.

WOOD-WORKING MACHINERY.

HAND CIRCULAR RIP SAWS.



No. 14—Wt 190 lbs., boxed 275 lbs., complete with two 10 in. saws, ... each $40.00

Will rip boards or planks of either soft or hard wood, of any thickness up to 3½ in., and of any width up to 19 in. The rollers are self-adjusting to thick, thin, or uneven lumber. The saw can be instantly set to or from the gauge to any width desired. Rabbets, bevels, tenons, etc., can be cut to advantage, and by using two saws side by side grooving for windows and door stops, etc., can be done. (An extra saw is furnished for this purpose.)

CIRCULAR SAWS.

No. 4—Iron and steel frame, 30x30 in., iron plate, complete with self feed, two 10 in. circular saws (one each rip and cross-cut), wt 400 lbs., crated 480 lbs., . . each $60.00

No. 5—Same as No. 4, ... each 65.00

No. 6—Boring Attachments, ... " 10.00

No. 7—Countershaft and Belt Pulleys, . . . " 10.00

No. 8—Universal Miter Gauges, ... " 10.00

Hand and foot power, hand rip tool, for thick or thin lumber, can be set to any [illegible] saw will not heat or can be instantly thrown back to rear of machine; also rip gauge, leaving table perfectly clear for cut-off work. Can be used for rabbeting and grooving. The [illegible] are the [illegible] grooving and rabbeting as well as when the [illegible] ripping. Cutter heads are also used for grooving and dadoing, and with knives of suitable width for [illegible]. Can be [illegible] with boring attachment, which is the same as used on the [illegible] machine.

FOOT POWER MORTISERS.

No. 9—Foot Power Mortisers, without chisels, wt 135 lbs., boxed 170 lbs., ... each $30.00

No. 10—Self cleaning Mortising Chisels, sizes ¼, ⅜, ½, ⅝, ¾, ⅞, and 1 in., . . . each 1.00

No. 11—Blind Slat Chisels, with 3 set bits, . . . " 5.00

Has great range for work, power on the chisel, accuracy in its action, and has all the required adjustments, which are easily and quickly made. Has abundant strength, is durable, and occupies but little space. Except the supplementary table and treadle, the machine is made entirely of iron and steel.

HAND TENONING MACHINES.

No. 16—Complete, wt 100 lbs., boxed 140 lbs., . . each $25.00

Will cut tenons of any length up to 3 in. By repeating the cut any desired length can be made. Will work on stuff of any size up to 2x12 in., and can be adjusted to gauge the length, thickness, and shoulders of a tenon. Will not cope a shoulder but will cut one shoulder further back than the other to accommodate stuff having a rabbeted edge, and will cut one shoulder deeper than the other if both alike, as desired. Both sides of the tenon are cut at once or one side only can be cut. Each thrust of the lever cuts a shaving [illegible] so that the rabbet plane has capacity of [illegible] and set 2 knives (as with a plane) govern the speed of the work. The machine [illegible] square shoulders, and can be set to cut [illegible] distance between the shoulders.

BARNES' FOOT POWER MACHINERY.

FORMERS.

No. 21—Foot Power Formers, without knives, w't 80 lbs., boxed 110 lbs., - - - - - - each $20.00
No. 22—Former Knives, Nos. 1 to 20, - - - " 1.00
No. 23—Former Knives, A to M, - - - " .50
No. 24—Fluting Attachments, extra, - - - " 3.00

For moulding edges of brackets, scroll work, panel work, regular and irregular mouldings of all styles up to ¾ in. The speed of the knives is from 2,000 to 2,500 revolutions per minute, insuring rapid and smooth work. The knives can be instantly made to rotate in either direction that the grain of the wood may require. The spindle and its bearings are of steel, with adjustments to take up the wear. The parts to set the machine for the use of different knives and work are convenient, and all substantial and durable. The table can be lowered 2½ in. below the lower cutting edge of the knife.

LATHES.

No. 3C—Complete, with 3 centers (1 a spur), 2 tool rests and sockets, and 1 turned face plate, w't 230 lbs., boxed 320 lbs., - - - - - - - each $35.00
No. 3W—Without lower portion but with short bench legs, each, - - - - - - - - - - 20.00

Designed for wood turning. Will take wood 12 in. in diameter and 3 ft. long. Has velocipede foot power and improved seat. Speed can be varied from 300 to 2,000 revolutions per minute, and the motion can be started, stopped or reversed instantly. Adjustable sliding seat can be readily moved along to any part of the bed that the work requires. This lathe is made entirely of iron and steel, except the bed, which is of wood. The spindle is of steel, fitted up in the best manner. All the bearings are of steel, making them strong, durable and light running. The centers are accurately turned, and true fitting. No wrench is required to adjust tail-stock or tool rests and sockets, hand wheels being used instead.

LATHES.

No. 4—All iron and steel, velocipede foot power, complete as described below, w't 210 lbs., boxed 265 lbs., each $40.00

For turning both wood and iron, and for boring, drilling, polishing, etc. Swings 7 in. and takes 20 in. between centers. Speed can be varied from 600 to 2,000 revolutions per minute. Solid bed with V-shaped projections, over which the head, tail-stocks and hand and slide rests are fitted. Lead screw for the carriage is operated by hand; carriage can be traveled 20 in. the entire distance between the centers, and can be engaged or disengaged instantly from the lead screw. The upper or cross-feed way on which the tool post moves can be set at any desired angle, and tapers can be turned and taper holes can be bored to the extent of its travel. Tail-stock can be moved and set at any point desired, by the simple turning of a hand wheel, or taken off entirely, leaving bed free for face plate or chuck work. Head stock spindle has taper bearings and is capable of very nice adjustment. Tail-stock center is self-discharging. The outfit includes face plate, two pointed centers and one spur center, hand rest, wrenches and necessary belting.

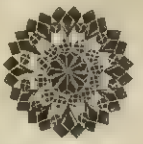
No. 4½—All iron and steel, velocipede foot power, complete as described below, w't 270 lbs., boxed 340 lbs., each $65.00

It is a back-geared screw-cutting lathe. Feeds right or left, and cuts screws right or left without change of gearing. Adjustable carriage for taper boring. Thoroughly gibbed for taking up wear. Tail-stock has side movement to adjust centers for turning tapers. Head-stock has hollow spindle for rods up to ¾ in. It swings 9 in. on the face plate and 4½ in. over tool carriage, and takes 25 in. between centers, has three speeds, and is suitably arranged for heavy or light work in turning or polishing. With face plate, two pointed centers and one spur center, hand rest, wrenches and necessary belting.

Solid Gold and Rolled Plate Onyx, Jet and Enameled Jewelry

Extra quality, all finely finished and made by the best manufacturers in these lines. Prices Each.

Polished black onyx.
No. 6457 ... $1 00

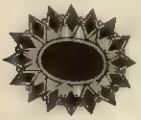


Polished black onyx
No. 6458 . $1 00

Rolled plate mounting, hard black enamel, satin finish, 6 pearls.
No. 6459 . . . $1 25

Hard black enamel, satin finish.
No. 6460 . ....$1 25

Black jet, satin finish.
No. 6461 $1 25



Black onyx, solid gold mounting.
No. 6462. . . $14 75

Black jet, satin finish, pearl set, 14k solid gold mounting.
No. 6463 . $11 75
With 10k gold mounting.
No. 6464 . $6 25

Black jet, satin finish, pearl set, solid gold mounting.
No. 6465 . . . $5 75
With gold filled mounting.
No. 6466 $1 50

Black jet, satin finish, pearl set, solid gold mounting
No. 6467. . . . . $4 80
With gold filled mounting
No. 6468 . . $1 25

Black jet, satin finish, pearl set, solid gold mounting.
No. 6469. .... .. $12 00

Black enamel, satin finish, pearl set.
No. 6470 40c

Black jet, satin finish, pearl set, 14k filled mounting
No. 6471 $1 25

Black jet, satin finish, pearl set, 14k filled mounting
No. 6472 $1 25

Black enamel, satin finish.
No. 6473 $40c

Black onyx, polished, carved.
No. 6474. .... $1 25

Onyx, black jet finish.
No. 6475..... .... $1 25

EAR DROPS.

Prices per pair.

Black jet finish, gold wire, pearl set.
No. 6476 Pair. $3 25

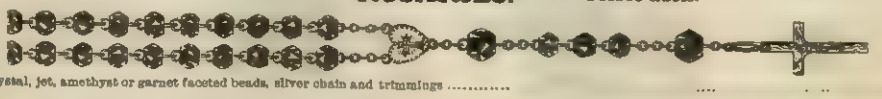
Black onyx, solid gold mounting and wire
No. 6477 .... Pair. $3 25

Black jet finish, gold wire.
No. 6478 . Pair. $1 25

Black jet finish, gold wire, pearl set
No. 6479 ... Pair. $3 25

ROSARIES.

Prices Each.



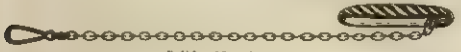
No. 6480 Crystal, jet, amethyst or garnet faceted beads, silver chain and trimmings $3 25

No. 6481 Topaz, garnet, amethyst and mother-of-pearl faceted beads, sterling silver chain and trimmings $4 25

BROOCH SAFETY PINS AND CHAINS.

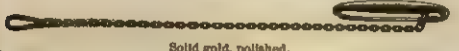
Prices Each.

Solid gold, chased.
No. 6482 $3 25



Solid gold, polished.
No. 6483 $3 25

Solid gold, Roman
No. 6484 $1 25



Solid gold, polished.
No. 6485 $2 75

No. 6486 Polished open curb links, solid gold $2 00
No. 6487 Gold filled 1 50

No. 6488 Child's ring chain, solid gold, polished $2 75
No. 6489 Gold filled 1 25

The above prices are subject to the regular discount.

The Holley 1908 Carburetor

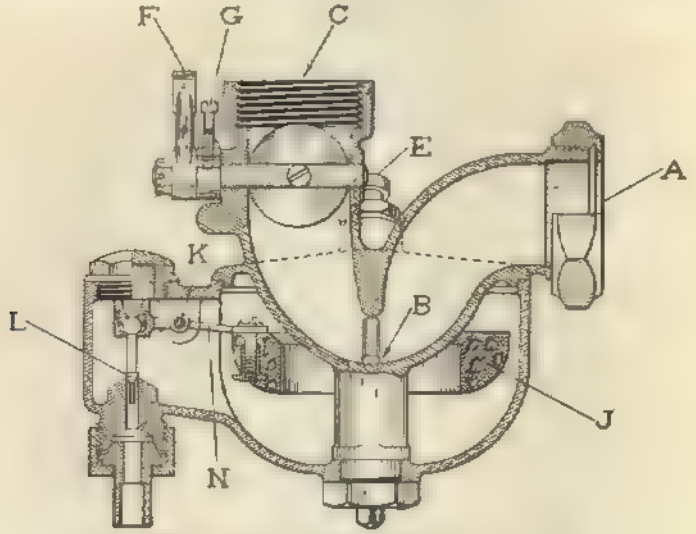
The Holley 1908 carburetor, which is claimed to be an automatic carburetor without moving parts, is manufactured by the Holley Bros. Co., Detroit, Michigan.

In the Holley carburetor a high air velocity is obtained in the mixing chamber by applying the principle of the Venturi tube. This feature, tho not itself original with the Holley carburetor, is important because it is seldom correctly applied, it is claimed. The true Venturi tube acts to discharge a liquid or gas with a velocity thru the smallest section of the tube greater than the velocity due to the head alone.

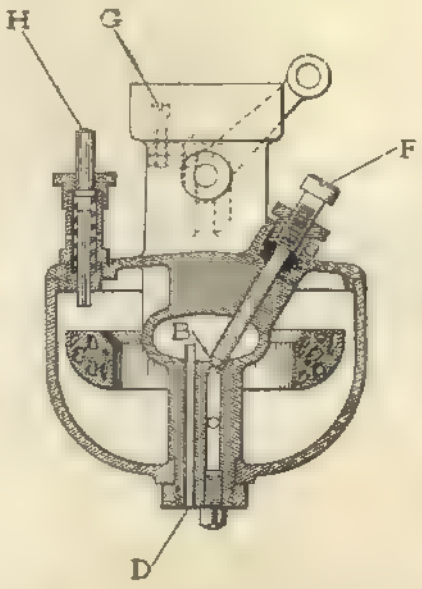
Referring to the sectional views, A is the air inlet thru which air passes downward and up thru a U-shaped tube, which is constricted at its lowest point. In the floor of the U is the gasoline orifice B, which is regulated by a needle valve, E. The carburetted mixture passes thru a butterfly throttle valve and on to the motor by the connection C. The float chamber surrounds the lowest part of the U, and has an annular cork float, J, which controls the gasoline valve L, thru a lever, N, pivoted at K. The U-shaped mixing chamber is merely the Venturi tube in a special form, allowing a very high air velocity to be obtained at B.

The gasoline level in the float chamber, instead of being slightly below the orifice B, is about one-eighth inch higher, and it is in this fact that a radical departure lies. In the new Holley carburetor there is a puddle of gasoline one-eighth inch deep in the bottom of the U when the motor is at rest. Consequently, when the motor is starting or running very slowly, the air does not have to lift the gasoline at all, but simply draws over the puddle and is carburetted by surface evaporation. As the throttle is opened and the air velocity increases, the puddle is gradually swept away by the strong air current over it, thus reducing the surface area of the puddle and maintaining constant proportions in the mixture. At the higher speeds the puddle is wiped out entirely, and a spray of the ordinary sort takes its place.

To start the motor, the float is depressed by the primer H. To prevent the mixing chamber from being flooded to excess, the drain pipe D is provided. The throttle valve is operated by the lever F, and the adjustable stop screw, G, permits regulation of the opening for minimum speed.

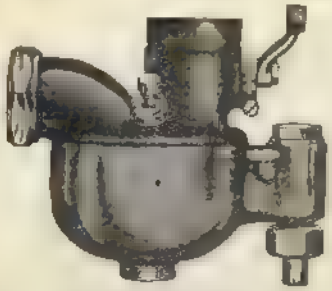


The "Holley" 1908 Carburetor, sectional side elevation.



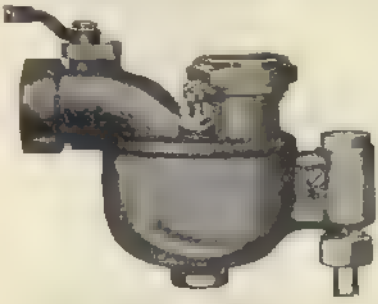
The "Holley" 1908 Carburetor: sectional end elevation.

The adjustment of this carburetor is exceedingly simple, practically all of it being done thru the needle valve E. In exceptional cases the level of the gasoline may



1909 Holley Carburetor Exterior, Top Outlet Type.

be too high, which would cause an overrich mixture at low speeds; or it is possible that the level might be too low. To remedy this the lever is bent down to lower the gasoline level and by bending the lever upward the lever will be raised. The normal

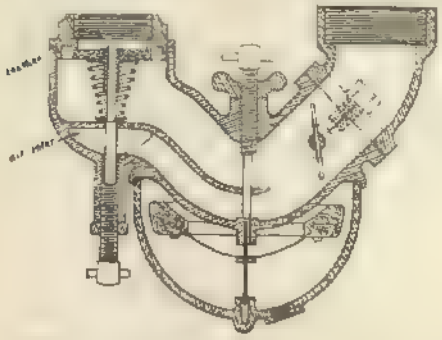


1908 Holley Carburetor Side Outlet Type.

level should cause a puddle to form one-eighth inch deep at B. In either case either adjustment can be made by bending the lever N slightly. All other adjustments are taken care of by the needle valve E

The "Rutenber" Carburetor

E. A. Rutenber, 800 Helm street, Logansport, Ind., the inventor of the well-

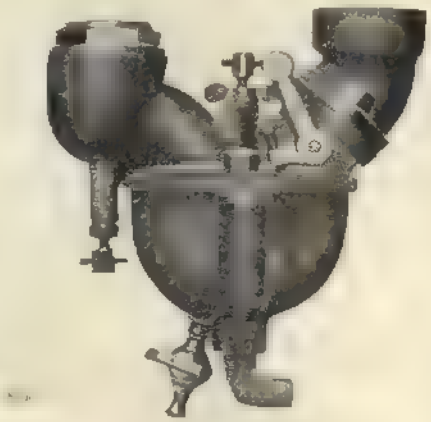


Sectional View of the "Rutenber" Carburetor.

known Rutenber motor, has brought out a new carburetor which contains some very unique features.

The mixing chamber takes the form of a half circle, with the spray nozzle at the bottom and in the center of the bowl, which eliminates any change in the quality of the mixture in ascending or descending hills or in turning corners. The gasoline valve is controlled by an improved lever type float which is claimed to prevent flooding. The needle valve is located at the top of the mixing chamber, which makes it very convenient to adjust.

The mixing chamber is divided into two parts, having two distinct openings, one controlled by an automatic air valve and



The "Rutenber" Carburetor

the other having a fixt air opening which allows a predetermined amount of air to pass the spray nozzle. The flow of air remains practically constant at all engine speeds.

The connection to the engine is bolted to a flange, which is placed at an angle of 45 degrees, and by turning the same around the carburetor can be used as a vertical or horizontal outlet. The Rutenber Carburetor is made of brass and is made in three sizes, 1-inch, 1¼-inch and 1½-inch iron pipe sizes and lists at $15.00, $18.00 and $20.00 respectively

"Kantryp" Auto Gloves

The Ellsworth & Thayer Mfg. Co., Milwaukee, Wis., have brought out a new auto glove known as the "Kantryp"

In this glove the fingers are made with two lengthwise seams, both at the back of the finger, away from wear. At that point where the fingers spread the "Kantryp" glove is reinforced against ripping by a patent strap facing between the fingers. The thumb seam is also doubly reinforced by a lap in the leather and is double stitched

The glove is made with a stout and comfortable military cuff that is claimed not to sag or break. The gloves are made of selected coltskin, black, reindeer or drab, at $2.50 per pair; of imported cape, tan at $5.00, and of imported Mocha, reindeer or drab at $5.00

1908 Brush Cars

The Brush Runabout Company, of Detroit, Mich., offer for the season of 1908, three models, the single cylinder $500 runabout, a single cylinder package cart on the same chassis, and an entirely new model known as the two-cylinder runabout, on the chassis of which is also to be made a large sized delivery wagon. All of these models retain the unique running gear features, as described in our March, 1907, issue, page 115, being in the main the use of spiral springs and wood frame and axles.

THE TWO-CYLINDER MODEL.

This new model has many features that are identical with those of the single cylinder runabout, the running gear, axle frame, spring suspension and transmission being the same except that the wheel base is 88 inches. The motor is a distinct novelty in gas engine construction. It is of the two-cylinder vertical type, 4x4 inches, 4-cycle, 12 H. P., both pistons being on the same crank and moving up and down together, but the cylinders exploding alternately. This motor, it is claimed, pos-

Fig. 1. Single Cylinder 1908 Brush Runabout. The special features of this car such as the spiral spring suspension, the wood frame and axles and the vertical single cylinder motor are retained but a [illegible] change speed is now [illegible]. Thermo-syphon circulation has been adopted. Price $500.

CHANGES IN THE RUNABOUT.

The transmission used for 1908 is an internal gear planetary, housed in a stationary case, with metal cone clutches instead of brake bands. The same transmission is used on all models. Other refinements have been made, such as the use of thermo-siphon circulation, improved oiling system using crank case compression with sight feeds on the dash and also a dash window, showing the operator the oil level; selective change speed operation, giving two forward speeds, reverse and emergency brake, all controlled by one lever.

sesses three distinct advantages. First, it is more accessible than the horizontal, its cylinder head and valve arrangement being the same as on the single cylinder. The cylinder head can be unscrewed and removed, the valve caps, one of them containing the spark plug, come out by unscrewing a wing thumb nut, and the crank case is laid open by removing a plate on the side. The second advantage of the vertical motor is in the carburation, as the gas has to pass from the carburetor only about 2 inches to reach the cylinder, and the pipe length to each cylinder is equal. The third advantage is in the lu-

brication which is more even than with horizontal cylinders. A saving in weight, gas and room may also be incidentally mentioned. However, this form of motor as heretofore constructed has been notorious for bad balance and gave excessive vibration. This, it is claimed, has been entirely overcome by a special balancing arrangement.

HOW IT IS BALANCED.

There are two distinct kinds of vibration; the mechanical, due to the starting and stopping of the piston weight, both pistons moving together; and the torque or side thrust, from the force of the explosion when the connecting rod is at an angle. As the ordinary crank shaft counter-weight revolves, it pulls sidewise as well as up and down, due to centrifugal action. Such a counter-weight therefore merely takes out about half of the up and down vibration, and puts in about an equal amount of side vibration. This kind of counter-weight is employed as usual, but a second counter-weight on a side shaft is geared to the crank shaft with the weight so placed that it is claimed it takes care of the up and down vibration due to the still unbalanced weight of the moving parts, but as the two counter-weights revolve in opposing directions, they neutralize the lateral vibration of each other, and it is said, completely balance the engine as far as vibration due to unbalanced weight is concerned.

The torque causes a diagonal rocking thrust, but the center of the counter-weight shaft is not on a level with the crank shaft, and these two weights in revolving also set up a rocking tendency of their own, which being at right angles to those set up by the torque, neutralizes, as the company state it—"all of it most of the time and most of it all of the time." Spiral gears are used to avoid blacklash and rattling. The balancing is so perfect that the car must be ridden in to be appreciated

A FEATURE.

One feature of the Brush line is having the steering wheel and control on the left side instead of on the right. Mr. Brush argues that in stopping at the sidewalk on the right side of the street, which is everywhere compulsory in this country, this arrangement allows both passenger and driver to descend without having to be a Japanese acrobat in order to climb over steering wheels, levers, extra tires, etc., or get off in the mud and walk around the car. Furthermore, in crowded traffic where the driver is continually endeavoring to get ahead of slow moving vehicles, and gain place further along in the line, it is very convenient for one steering on the left to look out ahead and see what is coming in the opposite direction. Again in passing vehicles going in the opposite direction, it is safer and easier to judge passing distances when sitting on the left. The British representative of the Brush Company after signing up for the British Isles noticed this feature and insisted that for the English trade the steering wheel be placed on the right, for the reason that in England the rule of the road is to pass on the left when meeting, just the opposite of this country.

The two-cylinder model is put out as a runabout for two passengers, but extras are supplied in the way of a rumble seat or a double surrey seat for the rear deck, these being readily interchangeable or detachable. This car is very speedy, and may be geared so that it will do close up to 60 miles per hour, and is also a good hill climber. One feature of the Brush construction is that on any of the models the gearing may be changed by simply changing the small sprockets on the ends of the countershaft.

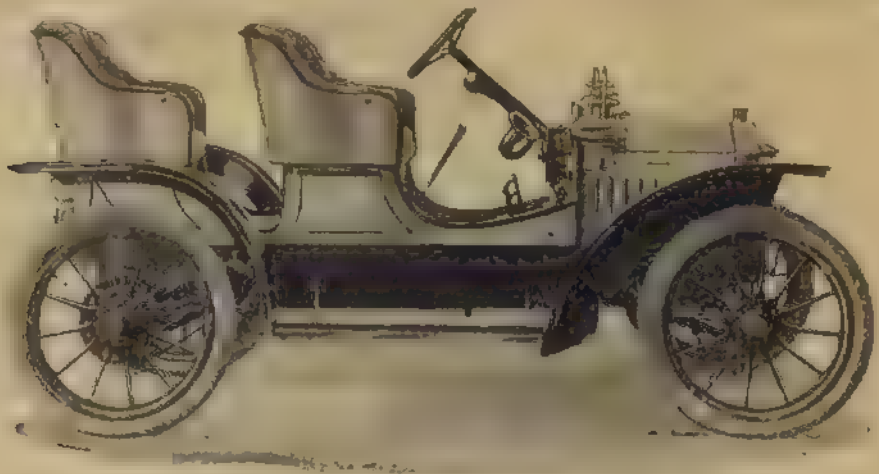


Fig. 2. The New Two-Cylinder Brush Model. A two-cylinder vertical specially balanced motor is under the hood at the front, both pistons on the same crank and moving in unison but exploding alternately, cylinders 4x4, 12 H. P., same change speed, frame, spring construction as the runabout, wheel base 88 inches. Price $[illegible]

1908 Matheson Car

The Matheson cars, manufactured by the Matheson Motor Car Co., of Wilkes-Barre, Pa., and represented by the Palmer & Singer Manufacturing Co., of 1619 Broadway, New York City, as sole selling agents, show a few changes in detail, altho the strictly Matheson features have practically all been retained. Three models on the same 50 H. P. chassis are offered. The first is a touring car selling for $5500; the second is a limousine, $6500, and the third is a landaulet at $6500.

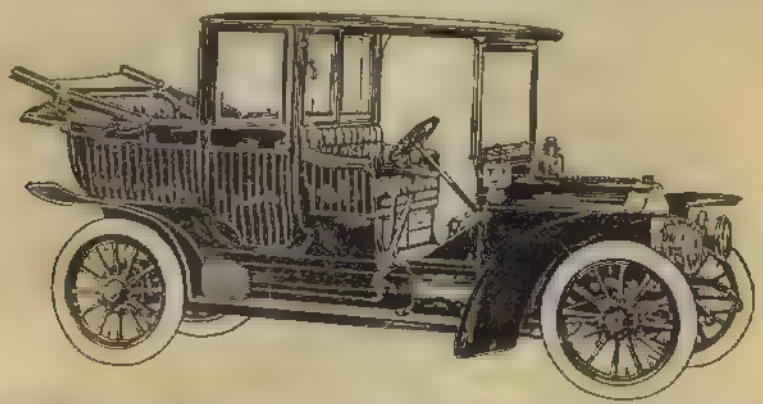


Fig. 1. 1908 50 H. P. Matheson Landaulet. This car is on the same chassis as the touring car and limousine. The cylinders are 5x6, with the same arrangement operated by external rocker and levers as in 1907, the entire mechanism being accessible without getting into the crank case. Make and break ignition is used. The Matheson chassis has simply been refined in detail, while the main features remain the same as in 1907. This landaulet sells for $6500, fully equipt.

MOTOR

The general features of the motor are the same as in previous models, the bore being 5 inches and the stroke 6 inches. The outside valve operating mechanism has been retained owing to its great accessibility. Among the changes which have been made in the motor, probably the most important has been the change of the cam shaft driving gears from the bevel to the spiral type, giving very uniform and silent driving. These gears are of special hardened steel, completely inclosed in an aluminum casing and packed with semi-solid lubricant. In case of any wear on these gears a simple device for slightly changing the position of the gear makes easy a readjustment. Ease of adjustment and accessibility have been largely considered in the refinements in the 1908 cars. The centrifugal pump previously used has been replaced by a pump of the gear type. The reason stated for this change is that a centrifugal pump of any size, and particularly in the small sizes is very inefficient at low speeds, while a gear pump delivers water exactly in proportion to the speed at which it is revolving.

The 1908 Matheson cars are still of the chain driven type. The forward sprocket has been fitted over a ball bearing which is held in a spherically ground fixture, allowing some chance for self-adjustment, so that the chain will not bind over the sprocket teeth. A special arrangement has also been provided for taking up the wear in the connecting rod lower end or crank pin bearings. This consists of a wedge located behind one of the halves of the connecting rod bearing box, which is very similar in design to the connecting rod ends of steam engines. These wedges can be advanced in a lateral direction by means of two screws, one on either side of the head of the rod. This provides means for an easily made and permanent adjustment.

Fig. 2. The new radiator contour of the 1908 Matheson cars, which outline will be a distinctive Matheson feature for the coming season.

The entire construction is as heavy and substantial as in previous years, the Matheson Company not laying claim to be-

ing makers of light cars. A new divided gasoline tank is provided on the 1908 cars, the smaler compartment containing but five gallons. This is separated from the other compartment by means of a by pass connection, which is normally kept closed to be used, in case of necessity, as a reserve. This small compartment is automatically filled when the main tank is filled.

The change speed mechanism, with the exception of the gear shifting details, remains the same as in 1907. A double bevel drive on the counter-shaft is used and shorter driving shafts are thus at-

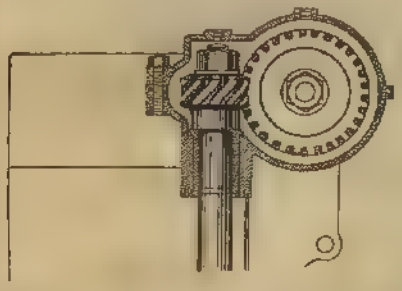


Fig 3. The arrangement of the spiral gears and casing on the 1908 Matheson showing the two-to-one gears and the details of the housing. These gears were of the usual spur type in 1907, but all the 1908 models will be fitted with spiral gears, which insure quiet running. A device is also provided by means of which wear in these gears can be compensated for. These gears are of specially hardened steel, completely enclosed in an aluminum housing, and run in semi-solid lubricant.

tained. The change speed gears provide four speeds ahead and one reverse. The change levers are operated by the usual gate system, but all the levers and connecting links and the cross slide tube have been completely covered and protected from road dirt and the weather. The frame is of nickel steel of the usual channel section, but is well trust to counteract any sagging, as it is well known that all frames, no matter of what material, sag after continued use. The multiple jet carburetor, as used in 1907, which is a distinctive type, as it does not employ the ordinary float feed system, is retained. A positively operated pump is used to suck the gasoline from the tank at the rear of the car, force it into the sight feed chamber beside the carburetor body, in which chamber a correct leve. with relation to the jets in the carburetor body is maintained by an overflow which carries the surplus back to the main tank. It is claimed that this system is not affected by grades, and is free from the disadvantages connected with the pressure feed system. The ignition is still of the make and break type. The Matheson ignition plugs can be reset without necessitating retiming of the motor, and the insulated portion or electrode can be readily removed without disturbing the hammer mechanism. This feature is pointed out as a distinct advance, as in nearly all the high grade make and break ignited foreign cars, the complete igniter has to be taken out when only a slight cleaning of the electrode is necessary. Double counter-shaft brakes controlled by a foot pedal are used, and 14-inch bronze, shoe-expanding brakes are used on the rear wheels. The steering gear is still of the worm and sector type, but the steering gear connections have been somewhat strengthened. A safety locking device has been arranged for the attachment of the steering arm to the link connecting with the steering knuckle. This device consists of a right and left hand plug and cap, which so enclose the ball end of the arm that it cannot pull out. The multiple disc clutch incased in the fly wheel hub is identical with that of 1907, and the lubrication system, consisting of force feed to the bearings, and also splash, has not been altered. The contour of the radiator has been changed to a neat, graceful and distinct outline.

It wil be seen that the 1908 changes consist simply of minor refinements of detail, as the general constructive features of the 1907 Matheson have proven satisfactory.

Pierce Again Wins Chicago Economy

Paul Hoffman, driving Harry Paulman's Pierce Arrow on October 18, won the 200 mile economy contest of the Chicago Motor Club for the Knight trophy, thus winning the Chicago economy test for the third consecutive time

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The meeting of October 31st of the Technical Publicity Association was devoted to the discussion of "The Mailing List in Securing Foreign Business." It was announced at this meeting that organizations modeled on the Technical Publicity Association were being started in Chicago and London, England.

The directory of the trade which is included in the January Journal is revised daily and kept strictly up-to-date. It is therefore the only really accurate and complete directory of this industry. All inactive and "dead" concerns are eliminated, a feature peculiar to our directory, and those who use it therefore waste no time or postage in useless correspondence, as is the case when unreliable directories are used. The January number of the Journal sells at the same price as other numbers, 20 cents per copy, but the best way to assure receipt of a copy is to remit at once $2 00 for a year's subscription, having the subscription start with the January number.

The 1908 Merkel Spring Frame Motorcycle

The 1908 Merkel motorcycle retains the spring frame feature that has brought it into such prominence in the past, and while the general design of this spring frame has not been altered the accumulated experience of the maker Merkel Motor Co., Layton Park, Milwaukee, Wis., has been utilized in refining it in detail, so that it is even more efficient than heretofore.

The 1908 "Merkel" spring frame motorcycle. 3 H. P., 3¼x3¼, ball bearing motor, double grip control; 28-inch wheels, 2½-inch G & J tires; wheel base 56 inches; gasoline tank capacity 1½ gallons (1 3 pints, enough for 200 miles running speed up to 50 miles, price, $200 with spring frame $2 with spring fork guaranteed for six months.

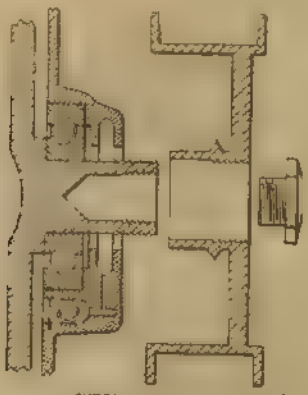
The appearance of the machine does not show any great change, but the whole thing has been dropt to give the rider a better position and lower the center of gravity. The makers have found that placing the saddle far back by means of an L-shaped seat post gives the best results with the spring frame, and the saddle of the 1908 Merkel is so placed, and it is also low enough to allow the rider to easily touch the ground with his feet.

The 1908 Merkel motor is ball bearing. The bore and stroke are each 3¼ inches, and the motor develops 3 H. P. A novel feature of this motor is the construction of the inlet valve, which comprises an arrangement for releasing the compression when starting. This compression relief is operated from the grip. The grip control is exceedingly simple, and piano wire under tension and not twisted is used in place of flexible shafts or similar devices for transmitting motion from the grip to the operating part. The right grip opens and closes the throttle, and operates intake compression relief device. This compression relief consists of a number of

The "Merkel" 1908 Motorcycle, with magneto fitted.

openings in the intake valve, which are uncovered by turning the right grip. The detail drawing herewith plainly illustrates this feature. The left grip controls the spark

Another clever feature of the 1908 Merkel is the commutator, details of which are here illustrated. This commutator is so arranged that it can be quickly removed by simply turning to one side a



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1908 Merkel Oil Reservoir in the crank case, surrounding the bearings.

blade spring as seen in the accompanying illustration.

Provision is made on the new model for the fitting of a magneto if this is preferred to battery and coil. If magneto ignition is desired, a Simms-Bosch magneto is fitted at an extra cost of $40. In such case the commutator is removed and a sprocket placed on the commutator shaft, from which motion is transmitted to the sprocket on the magneto shaft by a chain. This change can be made on any Merkel motorcycle in a half hour. A small sup-

AUTOMOBILE TRADE JOURNAL

The Merkel Relief Valve for easy starting.

port is attached to the crank case to hold the magneto, and only 18 inches of roller chain is required to connect the sprockets for driving the magneto.

A combination tank is used, in which gasoline, oil and battery are all carried. The battery compartment is of tubular form, about equal in circumference to that of the average dry cell. The cells are placed end to end with coil springs between them and a rubber buffer at the end to prevent their being knocked about in the compartment.

Power is transmitted by means of a 1½-inch 2-ply flat belt made of special chrome tan leather, same as has been used with satisfaction the past two seasons, but a

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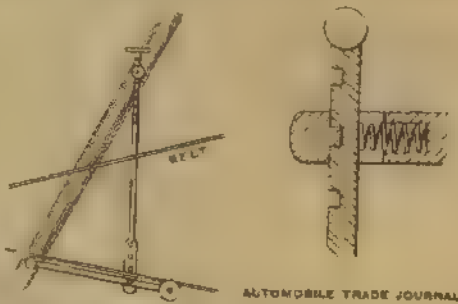
Merkel Gasoline Tank and Battery Compartment.

new idler is a feature of this model. This idler is adjustable, so that the tension of the belt can be regulated by the rider while the machine is in motion. The idler can be raised or lowered by means of a vertical rod, the handle on top of which is within easy reach of the rider. This rod is notched at intervals, as shown in the sectional view, to admit a correspond-



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Belt tightener of the 1908 "Merkel" showing section of the spring catch.

ing projection in a bracket thru which the rod passes, a spring normally keeping the rod prest against the projection so that a notch on the rod engages the projection in the slotted bracket. To change the tension of the belt the rod is forced to one side against the spring (thus pulling the

AUTOMOBILE TRADE JOURNAL

Merkel Muffler Cut-Out, which is foot operated. This illustration shows the position of the muffler on the machine

notch out of engagement with the projection), and can then be raised or lowered as desired. When again released the rod will be forced over and a notch brought into engagement with the projection. On the rear wheel a crown face wood pulley, without side flanges, is used.

The Double-Decked Buses of Philadelphia

The neat and business-like appearing electric buses now being operated on Broad and Diamond streets, Philadelphia, by the Auto Transit Company, have attracted considerable attention, being of the double-decked London type, and have already shown themselves to be popular with the public. These electric buses were built by the Commercial Truck Company of America, with offices at 1222 Arcade Building, and are of the 4-wheel drive type, giving them exceptional traction qualities, reducing the tire wear and to a large extent eliminating skidding, as was shown by tests made by the manufacturers. Non-skidding is also secured by the use of twin tires and altho the weight of the machine is great, excessive tire trouble is not anticipated as the route is over good pavement

cess to these upper seats and no passengers are taken after the seats are full, the company believe in "no seat no fare." A small sign at the right of the driver's seat and operated by the conductor when the car is full, appears with the words "No seats." At present this makes it necessary to refuse many, but when the service is complete many more can be accommodated. The fare is only five cents and is collected as on street cars by a conductor.

A complete description of these vehicles cannot be published at this time but a few of the main features will be spoken of. The most radical construction is the 4 motor drive, each motor and its wheel weighing about 690 lbs. All four wheels are alike. The wheel base is 10 feet 6 inches and the tread 5 feet 10 inches. The length over all is 19 feet and the height to the top of the rail is 11 feet 6 inches. The extreme stability of the machines is shown by a con-

One of the London type of double-decked electric buses recently placed in service on Broad and Diamond streets, Philadelphia, Pa., by the Auto Transit Company of that city. The machines are now running at 7 minute intervals and as soon as the 25 buses now nearing completion are placed in operation a 3½-minute schedule will be maintained. The fare is 5 cents and when all the seating capacity has been reached a sign bearing the words "No Seats" is displayed and no more passengers are taken.

The first cars were put in operation about the middle of July, 1907, over the route from Spruce north on Broad to Diamond and thence to Fairmount Park, a distance of about four and a half miles, or nine miles for the round trip. At the time of this writing, August, 1907, sixteen of the first twenty-five cars are in daily use, each making 12 trips, or about 108 miles per day. At present a seven-minute schedule is maintained, but when all the buses are in operation the machines will only be about 3½ minutes apart. The running time is about 35 minutes or an average of about 7.7 miles per hour, including stops. The buses are capable of 12½ miles an hour, four forward speeds being provided.

The cars seat 16 persons inside and 18 on top, where short cross settee-like seats are provided with an aisle at the middle. A rubber apron, which can be pulled up over the laps of the passengers in case of rain, is provided. A winding stairway gives ac-

sideration of the weights. The wheels and motors weigh 2760 lbs. and the 42-cell Exide battery weighs in the neighborhood of 3000 lbs., to say nothing of the springs, axles and frame; so it will be seen the center of gravity is very low. The bus complete weighs 11,500 lbs.

The top is well supported, altho not heavy in appearance. Heavy steel strips are embedded in the cross supports of the roof and in the uprights.

The batteries consist of 42 Exide 21 plate M. V. cells, and will drive the bus three trips, or 36 miles on one charge.

GARAGE AND CHARGING STATION.

A new power plant, at 31st and Dauphin streets, is now nearing completion and will doubtless be one of the best equipt stations of its kind in this country. There will be facilities for charging 150 batteries or accommodations for 50 buses, as three batteries are maintained for each bus. After

each third trip the machine is driven into a cross alley and stopt in front of an electrically operated ram which forces a completely charged battery off of a small hand-car and into the truck at the same time the new battery shoves the discharged one out on the opposite side onto another hand-car, so that it can be run under an electric traveling crane which hoists it rapidly and lowers it into position for being tested, inspected and recharged. The recharging is done by the three bus bar system, no resistances being used, but the voltage being stept up from 96 to 102 and 110. Current is furnished by three De Laval steam turbines, each geared down 10 to 1, to drive two 50 kilowatt generators giving a plant of 6 generators. The plant is well laid out and when completed will doubtless be very efficient.

Anheuser-Busch Co. Order Fifteen Pope Electrics

A single order given at one time by one firm for fifteen Pope-Waverley electric delivery trucks is the best possible evidence that goods transportation by electric motor power becomes daily more and more practical, efficient, and popular. Recently the Anheuser-Busch Brewing Association of St Louis, Mo., placed such an order with the Pope Motor Car Co.'s Waverley department Indianapolis, Ind., after a very thorough investigation of the merits of these cars best adapted to their particular needs. The body, gear and wheels are painted a bright red, set off with white trimmings and white and gold lettering on the sides; while on front, sides and back appears the ornamental monogram, or trade mark, of the Anheuser-Busch Brewing Association, showing the eagle, shield, etc., in artistic colors. The handsomely cushioned driver's seat is protected by a storm apron as well as by drop side curtains, and the whole effect is at once solid, substantial, comfortable and exceedingly attractive to the eye, no detail being slighted that could in any way add to the convenience and handsome appearance of the conveyance.

The motive power is furnished by forty-two cells of fifteen plate battery and two eighty-volt motors, double reduction, hung from chassis and connected thru the countershaft by a chain drive to the rear wheels. The power developed has shown itself sufficient for the most exacting demands of a quick delivery service extending over the entire city of St Louis and beyond its confines into the hilly suburbs.

The wheels are heavy artillery type, 36 in diameter fitted with solid rubber tires, four-inch front and five-inch rear.

There are no less than 55 entries received to date for the Commercial Vehicle Trials, to be held by the British Royal A. C., this fa

Pope-Waverley Electric Wagon 15 of which have just been placed in service by the Anheuser-Busch Brewing Association, of St. Louis.

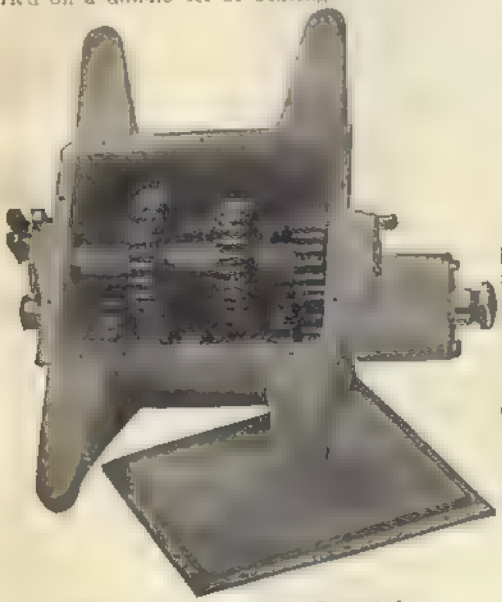
Thirteen of them are at present doing delivery service in St. Louis for the Anheuser-Busch Association, but two were selected to be sent to the Jamestown Exposition, where crowds of visitors have expressed their admiration of the handsome vehicles. The design is original, conforming to plans furnished by the Brewing Association as being

The John C. Roth Packing Co., Cincinnati, Ohio, have been using electric motor trucks for five years, and at the present time have five in operation. They have found the electric wagon superior in all respects to the horse-drawn vehicle, and are building a new reinforced concrete garage for the care of their trucks.

Syracuse No. 10 Sliding Gear Transmission

The accompanying cut shows the Syracuse No. 10 sliding gear transmission with cover removed. It is manufactured by the Syracuse Gear Co., 200 Geddes street, Syracuse, N. Y., and is of the selective type, 3 speeds forward and one reverse for shaft-drive.

The gear case is made in one complete unit with the exception of the cover or hand hole plate. The case is made of high grade aluminum and the brackets or arms are made of various drops and are well ribbed making very substantial brackets for installing or mounting. The main shaft and counter shaft are mounted on imported or Hess-Bright annular ball bearings, and carried on a double set of bearings.



Syracuse No. 10 Sliding Gear Transmission.

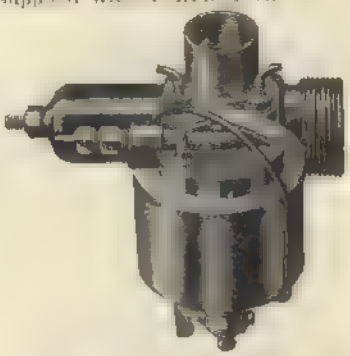
The gears and shafts are made from special hammered alloy steel. All gears in the transmission are machined to 1¼ inch face and cut to 6 pitch. The corners of the teeth are rounded over on a profiler and hardened in oil. The direct drive high speed clutch is of a design that permits throwing in without interruption. In case of any accidents to the clutch it can be renewed without changing the gears.

The same type of transmission can also be furnished with jack shaft for double chain drive. Weight of transmission for shaft drive is 75 pounds. List price is $160.

"Kalamazoo" Multiple-Jet Carburetor

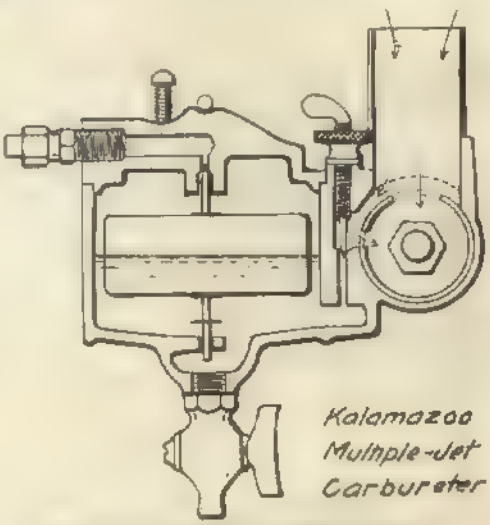
In this carburetor, manufactured by the Kalamazoo Carburetor Co., 1301 Grand avenue, Kalamazoo, Michigan, several new and valuable features are shown.

The gas or air inlet is thru a horizontal passage in the cover of the float chamber and may be turned in any direction for convenient attachment to the fuel supply. The cover of the float chamber is held in place by a spring clip and is easily removed. The gasoline jet projects directly upward in the float chamber. All other parts of the carburetor are mounted on it. The throttle and auxiliary air valves are connected with one main opening for convenience in priming to warm up. A separate water pocket is provided, well away from the gasoline vent, and supplied with a drain cock.



"Kalamazoo" Multiple-Jet Carburetor

A double method of control is embodied in this carburetor, consisting of two separate carburetors, each having its own mixing chamber, fuel regulating needle, and main and auxiliary throttle openings. Both carburetors are supplied from the same float chamber and thru the same main air intake. At starting, or when using little power only one of these carburetors is in operation and it is specially designed and adjusted for these conditions. All throttle openings and auxiliary air openings in both carburetors are controlled by one balanced piston valve,



"Kalamazoo" Multiple Jet Carburetor Sectional View.

to which a governor can readily be attached. The second carburetor is larger than the

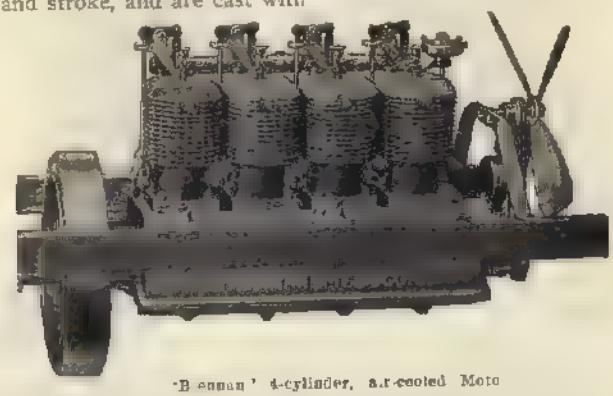
first and is specially designed and adjusted for great power and speed. It is brought into action by the same piston movement that operates the smaller carburetor and then both carburetors are in action

The only moving part of the carburetor is the balanced piston, which operates both main and auxiliary air openings as well as throttle opening

These carburetors are made in two sizes, 1 and 1¼ inch, listing at $18 and $20 respectively.

"Brennan" 4-Cylinder, Air-Cooled Motor

Besides the extensive line of water-cooled motors manufactured by the Brennan Motor Co., Syracuse, N. Y., they also make an 18 to 20 H. P. air-cooled motor, which is shown in the accompanying cut. The cylinders are of 4 inch bore and stroke, and are cast with very deep flanges integral with the cylinder. The flanges are perforated, thus increasing ventilation and circulation of air and radiation of heat. Other dimensions and specifications are the same as for the water-cooled motors described in our February, 1907, issue, page 278.



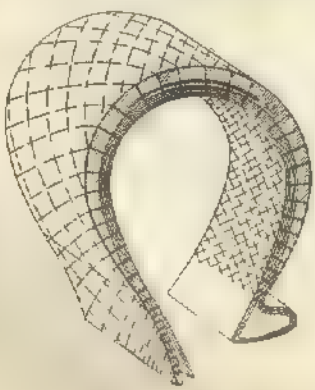
"Brennan" 4-cylinder, air-cooled Moto

The "Bragg" Stitched Tire

It is a well known fact that the casing of pneumatic tire flattens more or less at the point of contact with the ground, under the weight of the vehicle which it supports, and this flattening results in the formation of a bend or knuckle in the tire body at the border of the flattened portion, which bend is constantly shifted circumferentially of the tire by the rotation of the wheel, which subjects the layers of fabric and their binding element to a great strain which eventually results in the disintegration of the binding element and consequently the separation of the constituent layers of the tire body due to the working or movement of one layer thereof relative to another

In order to overcome this defect, F. H. Bragg Tire Co, 340-342 Main street, Springfield, Mass., has invented a process which consists of quilting together the layers of material constituting the tire body by sewing thru and thru the same, (before subjecting the tire to the vulcanizing process) a thread or cord coated or permeated with a substance which, when the tire has been finished, will cause the thread or cord to become permanently adherent to the tire body. This quilting serves to reduce the area in which movement of one layer of fabric may take place relative to another to that space located between adjacent lines of stitching

Any manufacturer can make this tire without changing forms or moulds or construction. The old tire is reinforced by 12000 stitches before the tire is lined and all vulcanized together, in one solid mass



"Bragg" Stitched Tire.

The New York & Broadway Rubber Tire Co., has opened a large new store at 1186 Bedford avenue, Brooklyn, N. Y, to carry a full line of supplies, and would be pleased to hear from manufacturers. James F. Fairman, formerly of Smith & Mably, is manager

The Automobile Supply Manufacturing Co., of Brooklyn, N. Y., manufacturers of horns, lamps and generators, have placed on the market a new line of Oval Horns, including all sizes, and having a deep penetrating tone. All goods manufactured by them bear the trade mark "Nonpareil," and are meeting with approval. On account of the increase in their orders they are compelled to work overtime at both plants, 139 Emerson place and 320 Driggs avenue, Brooklyn.

The Kermath 3-Passenger Speedaway

Hugh Dolnar.

The Kermath Motor Car Company, Detroit, Michigan, U. S. A, has brought out a new 4-cylinder car, two passengers in front and rumble seat in rear, under the name of "The Kermath Speedaway"

The Kermath Speedaway is a high powered roadster, the motor having four water-cooled, 4-cycle, 4¼x4½ inch cylinders, and showing nearly 30-B. H. P., at 1000-R. P. M on the testing stand. The new car, gear 3 to 1, has made 45 miles per hour

It is expected that 100 of these Kermath Speedaways will be built during the season of 1907. Its specifications are, wheel-base, 103 inches, gage, 56 inches; tires, all 32x3½ inches; motor, 4; water-cooled, 4-cycle, 4¼x4½ inches cylinders, nominal, 26-H P; sliding gear, 3-speeds forward and

The Kermath Roadster, 4-cycle, 4¼x4½, 30-H P, sliding gear; wheel base, 103 inches, tires 32x3½, weight 2000 pounds, price $2000.

a reverse, bevel-gear to divided rear axles, rear axles and front wheels on Timken roller bearings. Weight 2000 pounds; scale, price, $2000, including mat, horn, tools and 5 lamps, with acetylene generator, all ready for extended touring.

In the Kermath motor, which is an original design, the cylinders are cast in dual units, and have the cylinder water jacket space tapered, largest at top-end, to facilitate the thermal water circulation. The water-space is one inch wide at the top and ⅜-inch wide at the bottom, making the water-jackets taper ⅛-inch on a side in a length of 5½ inches The cooling is effective, and this rapid increase in the space-area as the water rises, is supposed to facilitate the circulation. There is no question as to the desirability of eliminating the troublesome water-circulating pumps, which requires packing in many of its forms, and often suffers from freezing

The commutator is on a vertical shaft, miter-gear driven from a four-miter pinion applied to the front side of the cam-shaft gear, all so that the entire commutator and commutator shaft assembly can be withdrawn upward, as a unit, without disconnecting anything except one collar-pin

The top water circulating pipe is 1½ inches diameter on the inside, and the bottom water pipe, from the radiator bottom to bottom of water jackets is one inch inside diameter.

The cylinders are offset ¼ of the piston stroke, ½ of the crank-radius, which is right for the working-stroke effects, but is more than is commonly thought advisable for the other strokes of the piston

The cam-shaft is driven at the middle by spur-gearing, the crankshaft integral pinion being in the middle of the middle crank-shaft journal. This drives the cam-shaft from the best place, and greatly reduces the liability of cam-time variation by cam-shaft torsion

The ports are good diameter, 1 11-16 inches for 4¼ inches cylinder bore, and the motor is strong for its dimensions.

The whole cam-shaft and its bearings are in one aluminum crank-case member, which can be removed bodily, after taking out the 6 bolts which retain it, without disturbing anything else

The fly-wheel rim returns on the forward side, so as to overhang the rear crank-shaft journal box, thus decreasing liability to vibration.

The "reversed" cone-clutch, 12 degree angle, is leather faced and the clutch spring is in the volute form.

Kermath Chassis--Right Side

The drive from the clutch to the line shaft is thru a hardened wabbler with barrel-shaped ends in hardened square sockets.

The side and lineshafts of the change-gear are in Parsons White's bronze bearings, flooded lubrication.

The propeller shaft is naked, with two Hartford universal joints. The pinion thrust is taken on Timken rollers. The steering is the Barnes two-screw action.

The rear hub brake drums are 12x2¼ inches. The internal emergency brake shoes are camel's hair belting faced, and are applied by the outside hand lever, which is linked to the clutch rocker so as to disengage the clutch before applying the brakes.

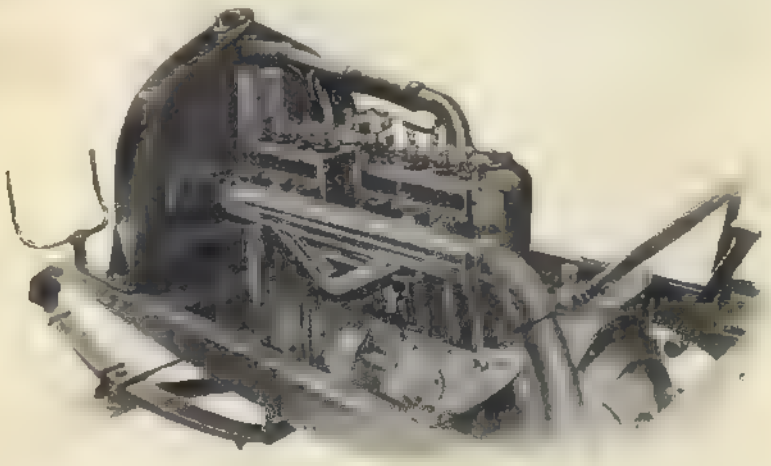
A third brake drum, 10x2 inches, is fitted to the line-shaft in the rear of the change-gear box and is applied by the left-hand pedal.

The gear-shift is made by the inside hand-lever, not linked to the clutch.

The spark and throttle control levers are stationary segment retained on top of the hand-wheel.

gear in this first Kermath is 3 to 1, and as the weight is light and the tires are 32 inches diameter the car is under geared, or over powered, whichever way the situation may be stated. The gear will be changed to 2½ to 1, regular, tho for hilly districts the 3 to 1 would not be much astray. With the gear as it is, the Kermath is too eager with its hind wheels on level roads.

The side streets were heavy with snow in this run, and the sharp winter air made the hustle anything but comfortable, yet the lively car and rushing wind produced an exhilarating effect, and brought the advantages of motor pace very strongly to the writer's mind. The route covered some 7 or 8 miles of snowy road and the weather was real winter, yet the run was made in a few minutes and without much actual dis-



Kermath Engine—Left Oblique View.

The springs are all half-elliptics, all 2-inch wide, front springs, 38 inches long, perched 4 inches forward of middle. The rear springs are 48 inches long, perched in the middle. All the springs are jointed in front and linked in the rear, to the chassis frame.

The chassis frame is prest steel, sides 4 5-16 inches, greatest depth, stock 5-32-inch thick. The frame sides are straight and parallel, and the frame is 30 inches wide.

The change gear is made by the Kermath Company, all gears hardened. The gear box is aluminum, and the gears run in oil. The axles are Timken's front and rear.

ON THE ROAD

A run of a few miles in Detroit streets showed the "Kermath" to be a prompt starting, still and very easy riding car. The comfort in this sprightly Kermath motor car, while it would have taken an hour or more with a good horse-drawn carriage, and would have been a freezing trip in anything short of an enclosed vehicle. The great demand for high-powered runabouts is founded on something of more real and substantial importance to the busy man than a mere fancy for the motor car. These strong, quick 1907 "Roadsters," a new type of car with a new class name, first appearing in large numbers in 1906, show decided advantages which the man who wants to "get there quick" cannot ignore, and the quickness makes runs of some distance easy, no matter what the weather is, that would be very disagreeable indeed with the slow footed horse for the traction agent employed.

Fifty thousand francs ($10,000) in cash prizes will be given in the 1907 Targa Florio, of which 15,000 francs will go to the winner of the contest. The entry fee will be 3000 francs, which will be returned to all who finish before the close of controls. A new system of classification will be em

MOTOR CYCLE DEPARTMENT

The Madison Square Garden Motorcycle Show

The grouping of the motorcycle exhibits at the Madison Square Garden Show, New York, November 2 to 9, proved to be an unqualified success. The exhibits were almost all placed in the basement in the cross aisle, which is just broad enough to admit of placing booths on both sides with a passageway of ample width in the center. All of the exclusive motorcycle exhibits were in this aisle, with the exception of the American Motor Co. which was just around the corner, and the Aurora Automatic Machine Co., who showed their latest cycle motors with automobile and accessory exhibits, and placed in out-of-the-way corners, and by reason of being scattered did not make much of an impression on the public or on the trade. The grouping of the motorcycle exhibits at this show was a feature which caused considerable comment, and gave the industry the position which it deserved. A concise summary of the exhibits follows:

Reading Standard Co., Reading, Pa., 2¼ H. P. single cylinder [illegible] cycle $200 and 3 H. P. [illegible] $225; 6 H. P. [illegible] $245; [illegible] tandem $2[illegible] [illegible] delivery car, on $30, and 3 H. P. convertible tricycle $290.

Motor Cycle Show, Madison Square Garden—Exhibit of the Reading Standard Co., Reading Pa., makers of the "R-S" motor cycles.

their automobile motors in the concert hall on the second floor. The motorcycle exhibitors were highly pleased with the results of this plan, as the showing certainly brought more prominence to motorcycles than ever before. The eyes of many were opened for the first time to the extent and importance of the motorcycle industry.

In previous shows the motorcycle exhibits have been distributed among auto-

Merkel Motor Co., 1098 26th Ave., Milwaukee, Wis., 2 H. P. single cylinder $200, 3 H. P. single cylinder with magneto ignition $24[illegible]

Consolidated Mfg. Co., Toledo, Ohio, 2¼ H. P. Yale "California" single cylinder $200.

Hendee Mfg. Co., Springfield, Mass., 2¾ H. P. single $200, 3½ H. P. single $[illegible]; 5 H. P. [illegible] cylinder $280, 7 H. P. single [illegible] cycle $340; 5 H. P. [illegible] cylinders [illegible] $395, 5 H. P. two-cylinder delivery van $395.

Excelsior Motor & Mfg. Co., 233 Randolph St., Chicago, Ill., 2¼ H. P. Triumph single cylinder $185, and 3¼ H. P. Excelsior single cylinder $225.

Light Mfg. & Foundry Co., Pottstown, Pa., 2¼ H. P. single cylinder $166, and 3 H. P. single cylinder $225.

G. H. Curtiss Mfg. Co., Hammondsport, N. Y., 3 H. P. single cylinder $200 and $225, 6 H. P. 4-cylinder $275 and 40 H. P. 5-cylinder $1200.

American Motor Co., Brockton, Mass., M-M, 2¼ H. P. single $140, 3½ H. P. single $175 and [illegible] 6 H. P. 2-cylinder $250.

J. [illegible] McLaughlin, 148 E. 49th St., New York [illegible] 1¾ H. P. single $210, 3 H. P. single $230, 3¾ H. P. single $255, 4 H. P. [illegible] cylinder $300, 6 H. P. 2-cylinder $320, 6 H. P. 2-cylinder vicar $500.

Royal Motor Works, Worcester, Mass., 2¾ H. P. single $200.

Oxlag on Motor Co., 2236 Broadway, N. Y. [illegible] H. P. single $215, 4 H. P. 4-cylinder $360, 4 H. P. tricar $475.

National Sales Co., [illegible] 226 Broadway, New York, 3½ H. P. [illegible] $[illegible] 4½ H. P. 2-cylinder $525.

twin cylinder model, and a 3 H. P., single cylinder, listing respectively at $275 and $200. In the 2-cylinder model the connecting rod bearings have been enlarged and a hardened steel bushing is now used on the crank pin end.

Motorcycle Makers to Form an Association

W. F. Remppis, of the Reading Standard Company, called together a number of motorcycle manufacturers just before the opening of the Madison Square Garden

Motor Cycle Show, Madison Square Garden. Exhibit of G. H. Curtiss Mfg. Co., Hammondsport, N. Y., showing the Curtiss motor cycles. The 3 H. P. single cylinder, 40 H. P. racing [illegible] is the machine with which Mr. Curtiss made the record for a mile in [illegible] seconds at Ormond Beach, January 3, 1907.

Aurora [illegible] 5th Ave., New York, 3½ H. P. [illegible] cylinder $285, 4½ H. P. 2-cylinder [illegible] 6 H. P. [illegible] cylinder $350.

H. A. Lozier & Co., 35 Warren St., New York. A large line of motorcycle accessories.

[illegible] Automatic Machinery Co., Aurora, Ill. 1908 Thor cycle motors and parts.

Detailed descriptions of the new features on the above machines will be found on the succeeding pages.

Improvements in Curtiss Motorcycles

For 1908 the Curtiss motorcycles will not be materially changed from last year's construction, the manufacturer, G. H. Curtiss Manufacturing Co., of Hammondsport, N. Y., having found radical changes unnecessary. An option is given in the 1908 models on 26 or 28-inch wheels. The engine pulleys are hardened steel. The control of the 1908 machine is divided between the two grips, the right hand grip controlling the spark advance, and lifting both valves. The throttle control and breaking of the circuit are in the left hand grip. The 1908 line includes a 6 H. P., Show in New York, and those assembled decided to hold a meeting during the Chicago Show for the purpose of forming an organization of all those interested in motorcycle manufacture.

Los Angeles Prohibits Open Mufflers

The Los Angeles, Cal., Motorcycle Club is taking an active part in the fight that is being made in that city against the open muffler nuisance. The club has publicly called attention to the fact that none of its members are permitted to indulge in the practise that is so objectionable, and announces that it will welcome and assist in carrying out the provisions of an ordinance that will forbid the use of motorcycles with open mufflers.

The National Association of Bicycle Jobbers has been granted representation on the joint Publicity Committee with the Cycle Manufacturers and Cycle Parts Associations.

Reo 1908 Changes

For the season of 1908 the Reo Motor Car Company, of Lansing, Mich., announce a line of cars with all the old and satisfactory construction retained, and very few changes. The principal models are "A" 2-cylinder 18-20 H. P. five passenger touring car; "B" 10 H. P. $650 four passenger runabout, and "C" 2-cylinder 18-20 H. P. roadster

This 1908 18-20 horse-power 2-cylinder Reo Model "C" Roadster is a handsome, shapely, attractive looking car. Its chassis is of the same complete design, simple and substantial construction as of the touring car with higher gear, and backed by its powerful engine, gives the speed and efficiency of many cars of higher price. The weight is evenly distributed; the engine and seats are placed further back, insuring comfort and making it an exceptionally easy rider. It is beautifully finished and by fitting it with the same design hood as on the touring car, running boards, fibre pan, better lamp equipment and battery box on the running board. The diameter of the wheel has been increased from 26 to 28 inches, and they are equipt with three inch Michelin tires with Goodyear detachable rims. The price is now $650 00, the quotations being f. o. b. the factory.

DETAIL CHANGES.

The body of the touring car is roomier and handsomer in every line; the back is higher; the engine develops more power, while the motor and transmission are more quiet. The diameter of the wheels has been increased from 30 to 32 inches, and they are equipt with 3½-inch Michelin tires with Goodyear detachable rims, instead of the 30-inch by 3-inch standard equipment as heretofore. This insures one inch more clearance for rutty and muddy roads, easier riding and longer life to the tires, besides greater economy in general

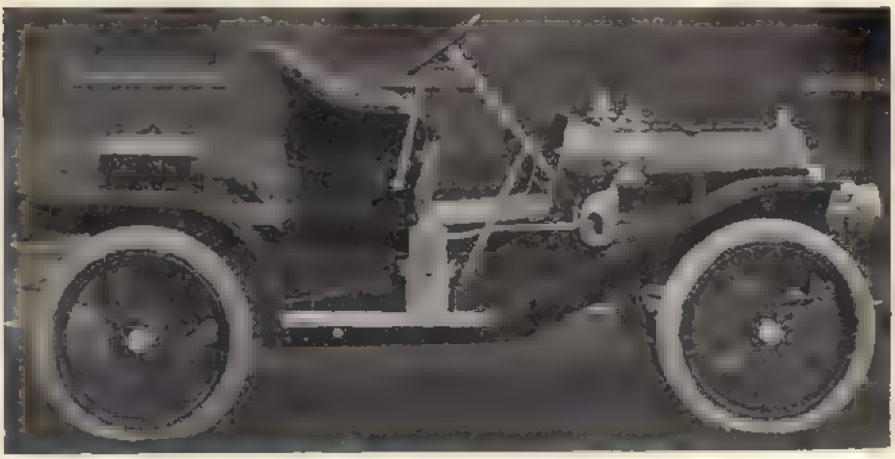


Fig. 1 1908 Reo Model "C," 18-20 H. P. two-cylinder roadster. The chassis is similar to that of the touring car of last year, few changes having been made. The engine and seats are further back giving good weight distribution, 32-inch instead of 30 inch wheels as on last year's models are used, fitted with 3½ inch Michelin tires and Goodyear detachable rims. A throttle on the steering column has been fitted in addition to the foot accelerator. The trunk box at the rear is convertible into a seat for two. Price, $1000.

trimmed, while its upholstery and appointments are claimed to be of the highest grade and most modern pattern. The entire outline of the car is graceful and pleasing. This roadster has ample carrying space and its equipment is the same as furnished on the model "A" touring car. The car is regularly equipped with trunk box, which is convertible into an emergency seat for two extra passengers. The finish, lamp, tire and tool equipment is the same as furnished on the touring car. The speed is 40-45 miles an hour. Price $1000.00.

The 1908, Model "B," 10 horse-power, 4-passenger Reo runabout, with folding rear seat embodies the same construction which made this model popular during 1906 and 1907. The design and general appearance of the car have been improved

maintenance. The strapt hood is of a new and nobby design and is made of open hearth cold rolled steel, finished with two coats of baked enamel

CONTROL CHANGES.

A very effective spark and throttle arrangement now appears on the steering post in addition to the foot accelerator for throttle, the latter having proven so popular and successful in former models. This unique arrangement affords the added advantage of acceleration by the foot throttle where both hands might be busy with the horn, spark, or speed levers.

The muffler, which is fitted with a cut-out is now invisible by being placed in the rear of the car over the axle, and is now claimed to be free from oil and smoke. An improved style of metal fenders with flanges and aprons add grace and natti-

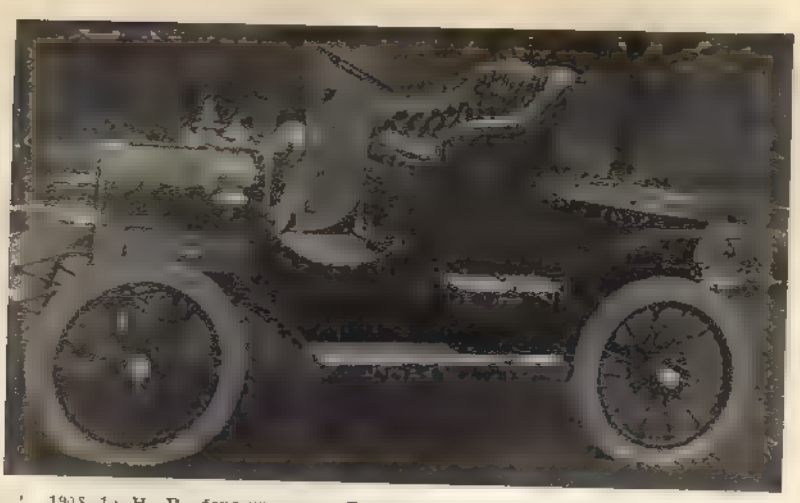


Fig. 2. 1908 10 H. P., four-passenger Reo runabout. This little car is fitted with a folding rear seat. A new design of hood and running board have been added, and also a fibre pan to protect the single horizontal cylinder engine. 28-inch instead of 26 inch wheels are now used, fitted with 3-inch Michelin tires. Price, $750, f. o. b., Lansing, Mich.

ness to the car, besides giving full protection. To insure positive contact and longer life an improved commutator with roller contacts now forms a part of the new equipment.

Perfect and absolutely safe as the 1907 brakes proved on the long steep and rough Blue Ridge and Allegheny Mountain roads in the Glidden Tour, the brake system has been improved by an emergency rear wheel brake with improved brake lever fitted in the outside quadrant ratchet with hand release. The full oil and gas lamp equipment will be of the Gray and Davis make with Bausch and Lomb mirror lenses in gas lamps. There will be a larger horn of the round "Dragon" triple turn type; a battery box conveniently placed on the running board; a brass robe rail fastened on the rear of the front seats; panel heel boards for both front and rear, and the company state an absolutely noiseless chain. The rear axle has tapered ends with wheels locked by key and nut, thus insuring positive reliability and safety on rough and dangerous roads. All in all, the 1908 model presents a more durable and efficient equipment with better appearance thruout. The price is $1250.

Moon 1908 Changes

Few changes have been made in the 1908 Moon cars, manufactured by the Moon Motor Car Company, of St. Louis Mo. A five-passenger car, a roadster and a new seven-passenger car with 121-inch wheel base are offered for 1908. The roadster and five-passenger car both have 110-inch wheel base. The roadster as shown in the photo sets very low, and is fitted with full elliptic springs in the rear. This car and also the touring car are fitted with larger wheels than in 1907, the front being 34 inches with 3½-inch quick detachable tires, and the rear 34 inches

1908 Moon Roadster, 30 3. H. P. 4 cylinder motor, overhead cam shafts, both valves in the head 110 inch wheel base, drop frame, giving low center of gravity without affecting the road clearance. A four speed selective change speed gear direct on the third is used.

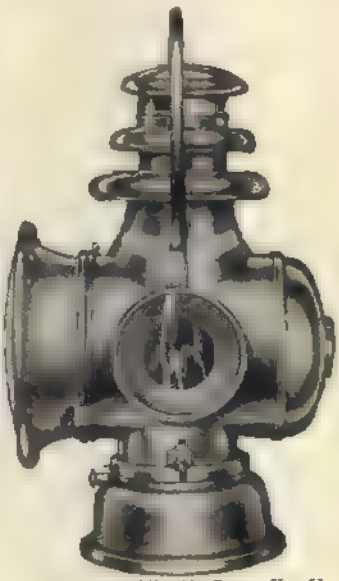
1907 "Standard" Oil ond Electric Lamps

We show herewith some of the latest styles of lamps put out by the Standard Lamp and Mfg. Co., of Charlotte, Mich.

The Standard small oil side lamp No. 6 is made in one size only, 9 inches high, 5½ in

"Standard" No. 12 Electric Side Lamp

"Standard" No. 8 Square Oil Side Lamp

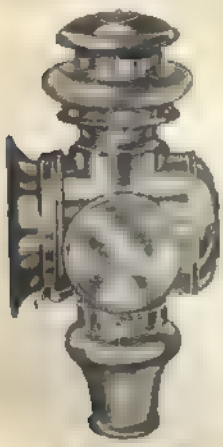


Standard" Oil Side Lamp No. 11

depth and 4½ in. flange. It can be had in black body finish at $6.75 per pair, in full brass at $7.50 per pair. It is especially suitable for small cars.

The Standard square oil side lamp is made in two sizes, viz., No. 8, 12 inches high, 4¾x5¼ body, listing at $10.50 per pair, black body finish, $12 in full brass. No. 9, 13 inches high, 4¾x5¼ in. body, $12.75 per pair, black finish, and $15 in full brass. Kerosene is used for fuel.

The Standard oil side lamp is for small and medium-sized cars, and is made in four sizes, Nos. 10, 11, 12 and 13. No. 10 is 12 inches high, 5⅜ inch front flange and 2¾ in. side flange. No. 11 is the same in dimensions, but has no side flanges. No. 13 is [illegible]¾ high, 6½ flange in front and 3¼ in. side flanges. No. 12 is same size without side flanges. Nos. 10 and 12 have no round side glass, as shown in cut. Nos. 10 and 11 are made with round prop holes, while 12 and 13 are with flat prop holes. Ingress and egress of air is at the top and thru their system of draft, which does not disturb the flames, overcoming sooting and clogging. Prices per pair are as follows: No. 10, $7.50; No. 11, $8.20; No. 12, $10.20, and No. 13, $10.95.



No. 6 Standard Small Oil Side Lamp

Standard" No. 13 Square Side Lamp

Standard" Electric Tail Light No. 61

The Standard square brass electric side lamp is of a popular design for limousines and large automobiles. The stems are French spun brass. Made in two sizes, viz., No. 52, 15¼ in. high, 6½x5 in. size of

body; 5x4½ in. size of glass; price per pair, $22.50; No. 53, 15⅝ in. high, 7x5½ in. size of body; 5½x5 inch size of glass; price, $30 per pair.

The Standard electric side lamps are made in two sizes, No. 54, 9 inches high, [illegible] in. dia. of body, 4½ inches diameter of flange, listing at $7.50 per pair, and No. 55 12 in. high, 4½ in. dia. of body, and 6 in. dia. of flange. Price, $10.50 per pair. The finish is in japanned bodies, with mountings brass or nickle. Can also be had with longer spun stems.

Standard Electric Head light No. 58

The Standard electric headlight is 5 inches, extreme depth, 6¼ inches, diameter of reflector and 6½ inches diameter of flange, listing at $11.25 each, full brass finish, and $12 in gun metal finish.

The Standard electric tail light is made in two sizes, viz., No. 64, 3½ in. dia. of body, 2½ in diameter of white lens, 2 inches diameter of red lens, listing at $4.05 each, black finish; $4.75 full brass finish, and $5.25 in gun metal finish. No. 65 is 4 in. in dia., 2½ in. dia. of white lens and 3 in. dia. of red lens, and lists at $4.50 each, in black finish, $5.10 in full brass and $5.85 in gun metal finish.

"Standard" Key Lock Switch

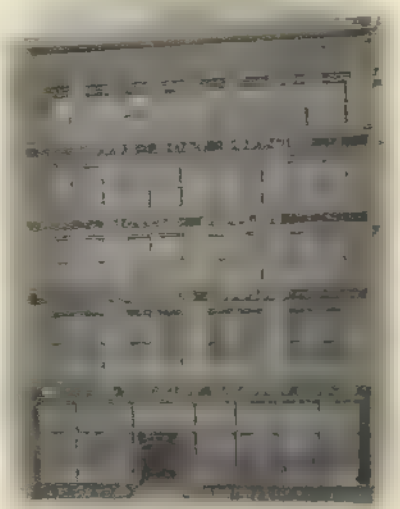
Herewith is illustrated the "Standard" Key Lock Switch manufactured by the Standard Auto Supply Co., 20 Broad street New York City.

The "Standard" Key Lock Switch is of the standard form of lock switch type, one wherein a key is used to release the circuit closing members so they can be operated. The contacts and terminals are contained within a water-proof and dust-proof base which insures perfect contact at all times. Standard Yale Locks are used, making an indefinite number of combinations so that switches are never duplicated. In this switch the barrel is normally locked against rotation, but when the key is inserted the barrel is released so that it can be turned to the desired position to close the circuit. The key cannot be withdrawn until the barrel is turned back to "off," thus making it impossible to leave the Switch open or unlocked. The Switches are constructed to control two sets of batteries, singly and in multiple, or can be wired for batteries and a magneto. Fits any coil box or can be placed wherever desired. The switch is

"Standard" Key Lock Switch

constructed of the very best material, and is so simple it cannot get out of order, no matter how rough the usage. Its list price together with 2 keys, is $3.50.

F. E. Frost, long associated with the Diamond Rubber Company, at Chicago, has organized the Model Vulcanizing Co., at 1547 Michigan avenue, Chicago, where he will conduct a vulcanizing business on a large scale.



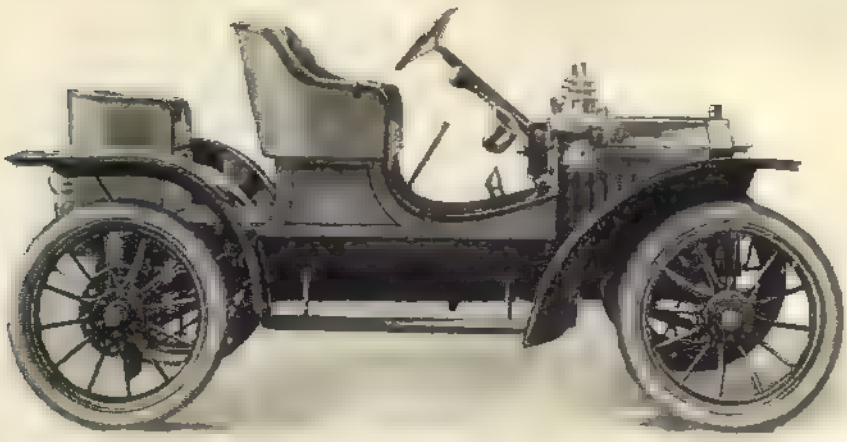
The [illegible] building of the Beasley Ranton Co. [illegible] six stories high, and has a [illegible] foot [illegible] and bicycle [illegible] business has forced them to enlarge their [illegible]

Brush 2-Cylinder

ANNOUNCEMENT

In addition to the single cylinder, we show at the Grand Central Palace for the first time, our 2-cylinder car, using the Brush *balanced* vertical motor 12 H. P., the same chassis being adapted by use of readily detachable seats for 2, 3 or 4 passengers, also laid out for large size delivery wagon.

"A Dream on Wheels"



By a simple balancing device, the motor runs as smoothly as a 4-cylinder, yet with the weight, simplicity and economy of a 2-cylinder.

We cannot give full description here. Come and see it at the New York and Chicago Shows.

As the start of the Brush Runabout has been the most notable event in the industry for 1907, so the additional 2-cylinder model bids fair to be the epoch-marker for 1908. Agencies for the line now being placed. See opposite page for prices.

Brush Runabout Co. :: *Detroit*

Brush at the Shows

New York, Oct. 24-31; Chicago, Nov. 30-Dec. 7

Every dealer owes it to himself to see the Brush Runabout line. The little "one lunger" has uncovered a demand and a market so enormous that previous figures on automobile consumption must be revised. Those who thought that a successful low priced car must be a cheapened imitation of the high priced one have missed their guess so far as we are concerned. While the demand for sport automobiles is still great, the demand for the utility car is many times greater. The bare announcement of the Brush Runabout has brought out a tidal wave of inquiries and orders. Some people of course don't want it, but others do, and in such numbers that we have been swamped. This type of car seems to have uncovered the biggest market yet. As we are now absolutely without competition, we have it all to ourselves. For the balance of this year, we can take on new trade only to the extent of samples, but our increased equipment is almost completed and for 1908 we expect to cover all important points in this country.

The $600 Package Cart Shown at New York

THE LITTLE SINGLE CYLINDER

PRICE LIST:

Single Cylinder Runabout	Solid Tires,	$500.00
Pneumatics $50.00 extra		
Single Cylinder Package Cart	" "	$600.00
Two Cylinder Runabout	Pneumatic Tires,	$750.00
Detachable Tool Box and Rumble Seat, $50.00 extra.		
Detachable Tool Box and Double Surrey Seat, $100.00 extra		
Two Cylinder Delivery Wagon	Solid Tires,	$800.00

Brush Runabout Co. :: *Detroit*

IT IS FALSE ECONOMY TO SAVE 5% ON FIRST COST AND LOSE 30% IN QUALITY, SERVICE & STRENGTH, BUT IT IS JUST WHAT EVERY BUYER DOES WHEN HE PURCHASES A SUBSTITUTE FOR THE GENUINE

COES

THE original costs a little more because it's better, the imitation less because it is made inferior to sell at a cut price and to trade on the reputation established by the merit of the original. The buyer saves in the beginning and loses in the end. The result is false economy, which is charged to experience. Those who know don't have to buy experience. Remember, there is a warrant back of every COES WRENCH, and as we have been in business for over 65 years, that warrant is worth something. It's moral, as well as legal, and it's a guarantee built upon a long established reputation.

Coes Wrench Com

of pneumatic tires [illegible] alone gives great interest to [illegible] improvement in automobile springs. [illegible] a great many efforts have been made to [illegible] overcome the objections to [illegible] covering coil [illegible] and the Annable [illegible] the

[illegible] a flexible leather casing below and [illegible] air bag of soft rubber quite like [illegible] tire to the function [illegible] spring. The air cushion [illegible] with each other at [illegible] the spring cushions receive [illegible] the tank, but an air-cushions, consisting of a rigid metal automatic valve prevents the very rapid re-

Fig. 3. Front of car fitted with solid tires and Annable pneumatic springs.

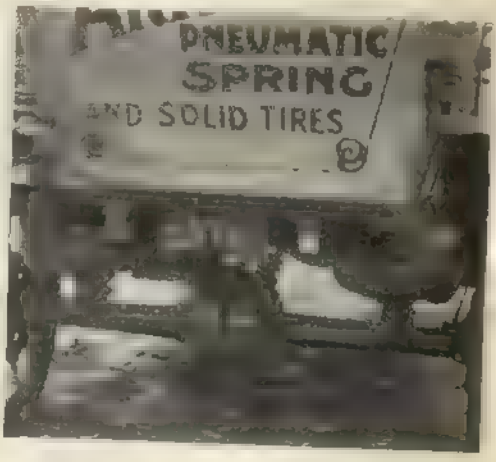


Fig. 4. Rear of car fitted with solid tires and Annable pneumatic springs.

latest effort in [illegible] car direction, and is hoped [illegible] sales nothing short of [illegible] pressure [illegible] smooth [illegible] portion [illegible]

[illegible] air from the tank to the cushion system [illegible] for air has been [illegible] from the cushions to the tank [illegible] by [illegible] changes in the road

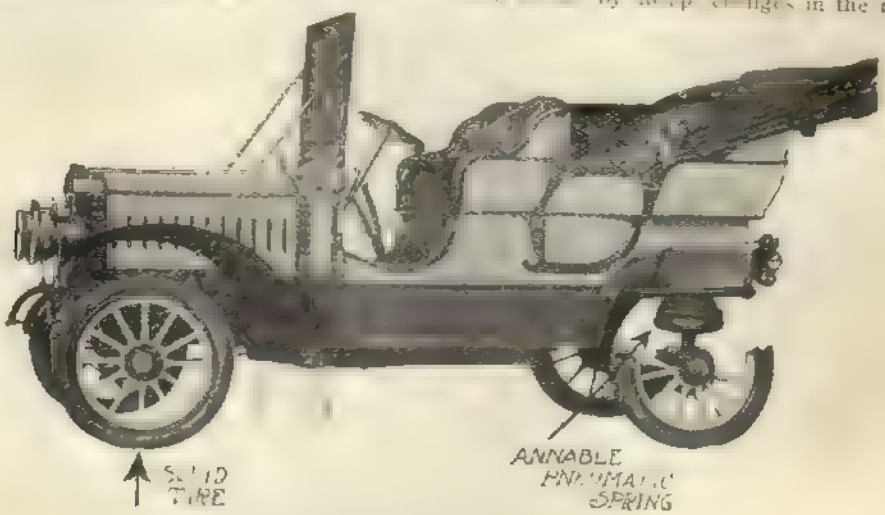


Fig. 5. Annable Pneumatic Springs Fitted to Car

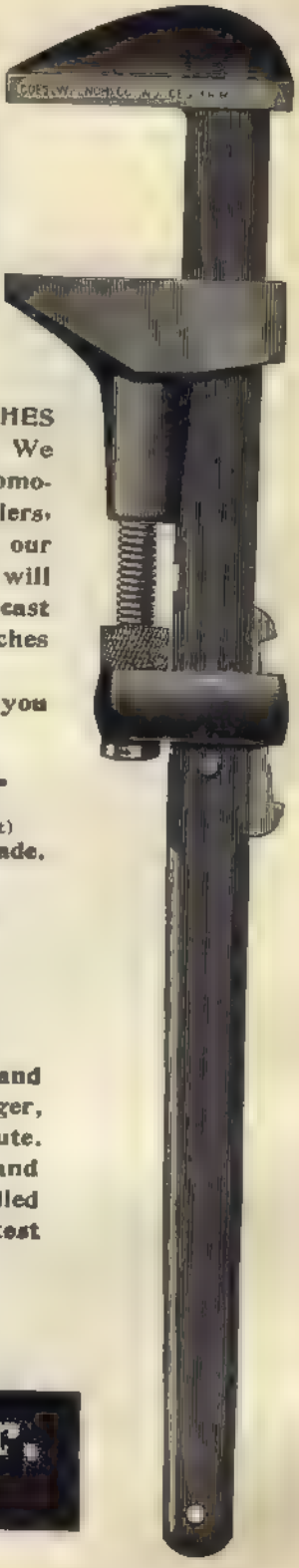
The conception, the dominating idea of the Annable pneumatic spring [illegible] to place the [illegible] between the [illegible] the wheels can follow the road [illegible] without changing the [illegible] pressure [illegible] sure which supports [illegible]

The Annable [illegible] system is very simple. A reservoir [illegible] air compressed to about 10 pounds to the inch is piped to four [illegible] surface.

The automatic tank valve prevents the [illegible] and refilling of the air bags after the air has been expelled by a heavy shock, and [illegible] the possibility of tossing the [illegible] passengers.

It is possible, of course, in theory at least, to [illegible] the top and bottom of the air cushion together, but if the cushions are large

WRENCH



WHERE other wrenches fail, COES WRENCHES have demonstrated their superiority. We are now selling to the largest automobile manufacturers, jobbers, and dealers, but we would like to add every reliable firm to our list, as we know that the COES WRENCH will replace in value received to the purchaser many cast iron fork wrenches and many other special wrenches of various sizes.

If you run a Garage or make or own an Auto, you need these wrenches.

The Key Model

(Right Cut)

28 in. and 36 in. long, largest nut wrench made. Strong, unbreakable, handy and cheap.

Will replace a dozen forged special wrenches.

The ★ Steel Handle (Left cut)

In seven sizes—from 4 in. to 21 in. Heat, damp and wear proof. Steel handle. 30 per cent. stronger, size for size than any imitation or substitute. These wrenches are made with very few parts, and are put together to last. They can be handled carelessly, without being injured. This is a test which other wrenches cannot stand.

Send for Catalog.

pany Worcester, Mass.

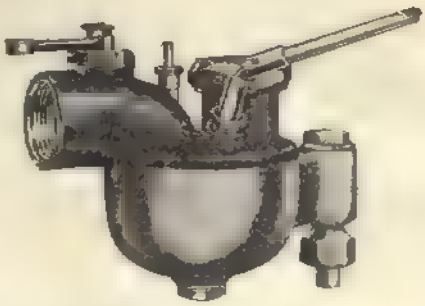
IS THAT CAR FRACTIOUS AT LOW SPEEDS?

Don't Whip It. *Don't Curse It.* *Don't Sell It*

It's Not the Fault of the Car---Only of the Carburetor

The ordinary spraying carburetor must have a certain minimum suction to make a spray. With a very low throttle, it simply fails to give the right mixture.

The Holley Model W Carburetor is so designed that at low speeds it works by intensified surface evaporation, not by spraying. Therefore it has **no minimum working speed.** It will run any motor at a walking pace in high gear. It is automatic throughout its entire range, and it responds **instantly** to changes in the throttle.



Model W Carburetor,
showing Universal Joint on gasoline needle valve, by which valve may be regulated from the seat while driving.

It has only one adjustment, which any novice can regulate, and which cannot get out of order. Catalog tells the whole story.

Put on a Holley Carburetor and Forget it!

The Holley Model W is made in a large number of special styles, attachable without machine work to cars now equipped with inflexible carburetors.

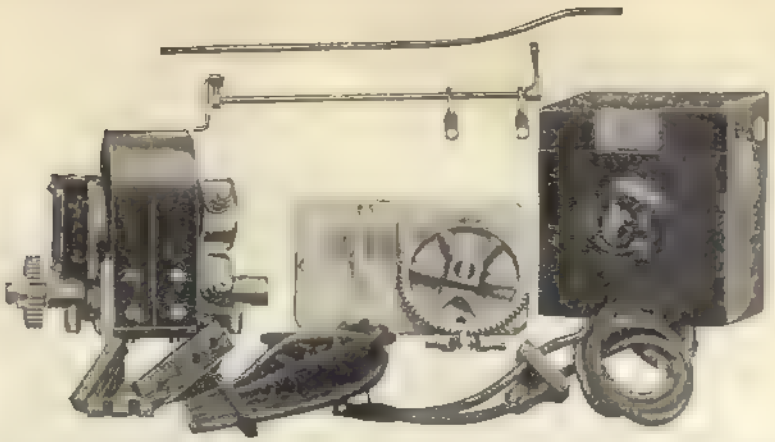
Write for full particulars to us or to the nearest agent.

(*See Opposite Page*)

HOLLEY BROTHERS COMPANY,

Detroit, Mich.

A Special Holley Magneto For the Ford Runabout



The logic of the magneto is the logic of the mechanical oiler. It is virtually a part of the motor, and supplies current as long as the motor runs. With a four cylinder motor, there is as much reason nowadays for using a delicate, uncertain battery, as there would be for using sight feed oil cups, which feed or not, regardless of what the motor is doing.

Hitherto magnetos have been so costly that their use on moderate-priced cars has been almost prohibited. We have remedied this as regards the Ford Runabout, by bringing out the well-known HOLLEY MAGNETO in a special size, attachable directly without machine work. We furnish all necessary fittings and full directions. Satisfaction guaranteed.

Price of Ford Runabout Magneto, $70

complete with coil and all attachments.

The battery now on the car is connected into the system and used as a reserve. Throwing the switch draws current from battery or magneto at will.

HOLLEY BROTHERS CO., DETROIT, MICH.

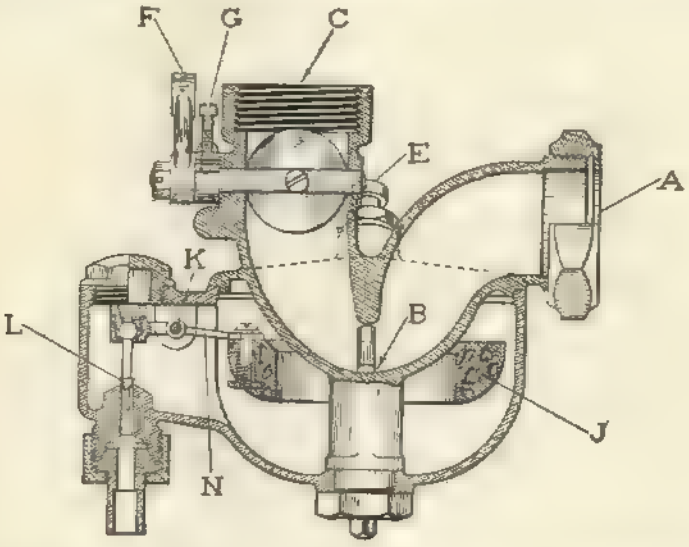
New England—Post & Lester Co., Hartford, Conn.
Pacific Coast—Geo. P. Moore Co., 721 Golden Gate Ave., San Francisco, Cal.
Geo. P. Moore Co., 1005 South Main St., Los Angeles, Cal.
Geo. P. Moore Co., 231-233 Twelfth St., Oakland, Cal.
New York—Chas. E. Miller, 97 Reade St.
Philadelphia—Chas. E. Miller, 318-320 N. Broad St.
Cleveland—Chas. E. Miller, 406 Erie St.
Buffalo—Chas. E. Miller, 824 Main St.
Chicago—Excelsior Supply Co., 233 Randolph St.
Denver—Denver Auto Goods Co.
Canada—John Forman, Montreal

The New Holley Carburetor

(Patent Applied For)

Non-Spraying, Without Moving Parts, Yet Perfectly Automatic

The spraying carburetor MUST have a certain minimum suction, else it fails to spray. To be automatic, it MUST have a moving air valve balanced by a spring. At best, it is an ingenious development of an imperfect principle, and it is always delicate and liable to need readjustment.



In the 1908 Holley the RIGHT principle is applied with beautiful simplicity. The air stream impinges sharply on a gasoline puddle of definite area. As the air velocity increases, the area of the puddle is automatically diminished, thereby maintaining constant proportions in the mixture. A perfect mixture is the result, no matter how slowly the motor runs.

The air enters at A and draws through the U-shaped mixing chamber, in the base of which is the gasoline puddle. An orifice at B controlled by the needle valve E admits gasoline from the float chamber, the normal level being ⅛ inch above the floor of the U. As the throttle is opened, the puddle is gradually swept away, thus reducing its area in carefully-determined proportions. At the highest speeds the puddle is wiped out, and an ordinary spray from B takes its place.

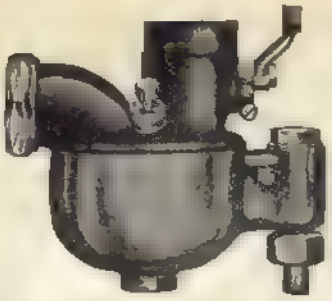
To start, the float J is depressed as usual. An overflow (not shown) prevents flooding. The only adjustment is that of the needle E.

PRICES, SIDE AND TOP OUTLET MODELS

¾ inch $11.00. 1 inch—$12.00. 1¼ inch—$13.00. 1½ inch—$16.00.
DELIVERIES: 1", Aug. 10; 1¼", Aug. 30; 1½", Sept. 15; ¾" Sept. 30.

HOLLEY BROTHERS COMPANY,

Detroit, Mich.



Special Forms of the HOLLEY 1908 CARBURETOR are made to fit the following cars at the prices stated:

Ford Runabout. Models "N" and "R"	Price, $12.00.	Now Ready.
" 1905 Model "B"	" "	" "
" " " "F"	" "	" "
Mitchell 1906 Runabout	" "	" "
" " Touring Car	" "	" "
" 1907 Runabout	" "	" "
" " Touring Car	" 13.00.	Delivery, Sept. 1st.
Dragon " " "	" 12.00.	Now Ready.
Olds 1905 Touring Runabout	" 13.00.	Delivery, Sept 1st.
" 1906 Model "S" Touring Car	" 14.00.	" " "
" 1907 " "A" " "	" 14.00.	" " "
Thomas Forty 1907	" 16.00.	" " 15th.
Queen Four-Cylinder, 1906 and 1907	" 13.00.	" " 1st.
Marmon Model "C"	" 12.00.	Now Ready.
Marmon Models "D" and "F"	" 13.00.	Delivery, Sept. 1st.
Winton Models "B" and "K"	" 12.00.	" " 15th.

OTHER TYPES TO BE ANNOUNCED LATER.

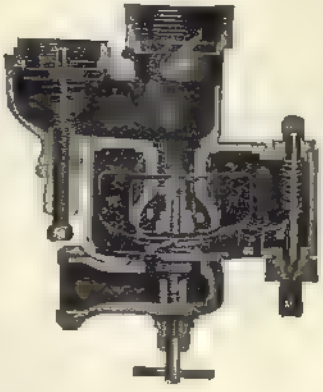
We will sell

our remaining stock of

1907 Carburetors

(auxiliary air valve type)

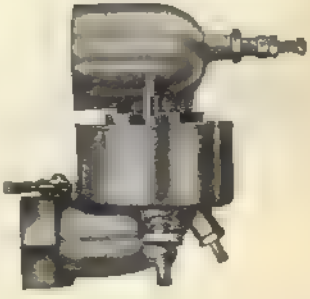
at the following prices, as our 1908 models are ready for delivery. They give excellent results where very close throttling is not required.



Model E

Prices:

¾ inch	$5.50
1 "	6.00
1¼ "	6.50
1½ "	7.00



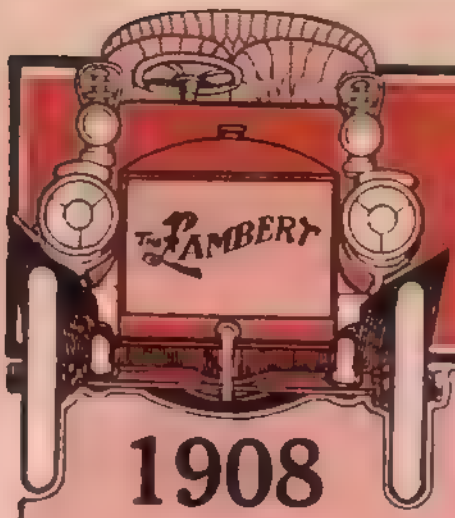
Model S

Prices:

1 inch	$7.00
1¼ "	8.00
1½ "	9.00

See Our 1908 Carburetor Advertisement on Another Page.

HOLLEY BROTHERS CO., Detroit, Mich.



THE LAM

1908 The Car That Has

The Friction Drive principle of propelling Automobiles has the endorsement of the world's greatest mechanical experts. It gives you the widest range of speed changes, which eliminates all gear troubles and prolongs the life of tires. It is simplicity itself and a child can comprehend its operation. In our

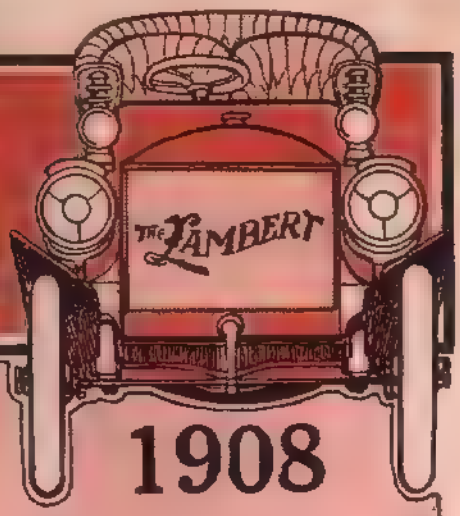
"Lambert 18"

we believe we have produced the best car obtainable anywhere for the money, and a car with many superior points over higher priced cars. 100 of these Cars will be ready for delivery during the month of November. Our capacity has been doubled and prompt delivery of cars will be a "Lambert" specialty in 1908.

Write for Advance Catalog No. 29, giving detailed description of "THE LAMBERT 18."

BERT

FRICTION FLYER



No Gear Box

1908

$800. THE LAMBERT 18 $800

SPECIFICATIONS

CAPACITY—3 Passengers. **WHEEL BASE**—95″. **TREAD**—56″. **FRAME**—Pressed Steel. **WHEELS**—30″ Wood Artillery. **TIRES** 30x3″ Michelin. **MOTOR** 2-cylinder Opposed, 18 H. P. **TRANSMISSION**—Friction. **SPEED**—1 to 35 miles per hour. **CARBURETOR** Float Feed. **IGNITION** Jump Spark. **RADIATOR**—Honeycomb. **DRIVE**—Single Chain to Rear Axle, encased. **BRAKE** External on each rear hub. **BEARINGS**—Hyatt Roller and Standard Ball. **CLEARANCE**—12″. **GASOLINE CAPACITY**—12 gallons. **LENGTH OF BODY FROM INSIDE OF DASH**—76″. **WIDTH OF BODY TO OUTSIDE MUD GUARD**—63″ **WIDTH OF BODY** 32″. **WIDTH OF FRONT SEAT**—56″ inside of cushions. **WIDTH OF REAR SEAT**—18″ inside of Cushion. **HEIGHT OF FLOOR FROM GROUND** 29″. **PAINTING**—French Grey. **UPHOLSTERING**—Fine quality of leather; springs in cushions and backs of seats. **WEIGHT**—1350 lbs. **EQUIPMENT**—Two oil lamps, horn and full tool equipment. Price—$800.00, complete, f. o. b. factory.

The Buckeye Manufacturing Co.

ANDERSON, IND.

Members American Motor Car Mfgrs. Assn.

THREE POINT SUPPORT — UNIT POWER PLANT

STEVENS-DURYEA

Don't Fail to See Our Exhibit at the New York Show, Nov. 2-9

Including the New Model X

At the top of this ad is shown the trademark of the Stevens-Duryea and it means that its power plant—the vital part of an automobile—is designed in the only way an automobile power plant should be designed—in one Unit and supported at Three points.

The Unit construction not only so simplifies the mechanism that the novice may readily understand and care for the car, but makes possible a wonderful reduction in weight, which means more power and a minimum of tire trouble.

The Three Point Support enables the car to go over the roughest roads with not the slightest injury to the power plant. Especially is this most important in the six-cylinder car with its longer engine and more bearings to be kept in alignment. The intending purchaser of a six cylinder car should carefully consider this Stevens-Duryea advantage, the lack of which spells constant trouble and short life for any six-cylinder car.

Lighter weight, simplicity, freedom from tire troubles and perfect alignment always —is this not the car you are looking for?

All our models including limousines will be exhibited. Send for limousine catalog.

STEVENS-DURYEA COMPANY

700 Main St., Chicopee Falls, Mass.

MEMBER OF A. L. A. M.

The Light Six, Price $3500

The New Ellsworth Car

This new entrant into the motor car field is the work of Mr. John M. Ellsworth, and is the result, it is claimed, of many years of automobile experience; the constructions being those shown to be correct by experiments in a well equipt laboratory by competent engineers. The chief point claimed for the new car is the fact that the very best material compatible with its selling price has been used. The statement is made that the Ellsworth car holds no material in its make-up of any character, excepting the special grades of die forged alloy steel such as chrome nickel, chrome and chrome vanadium steel.

discussed at another time. The axles are I-section, die forged of chrome nickel steel of artistic appearance, great strength and symmetry.

The chassis frames are of special "Krupp" chrome nickel steel. These members are 120 millimeters deep—nearly five inches—possess extraordinary rigidity, and it is claimed are unbreakable. It was the aim of the Ellsworth designers to make every part of such fine material that under no circumstances, would the parts rupture, altho they might deform in a collision. The only way this can be done is by employing materials which will not show signs of rupture when bent 180

Fig. 1 The Ellsworth Patented Built-up Crank Shaft This shaft is provided with annular ball bearings, and so constructed of chrome nickel steel in sections that each throw is independently supported by the bearings.

The necessary deviations from these principles are as follows: Cylinders, of gray cast iron; gear and crank cases of aluminum alloy or steel bronze at the option of the purchasers; fly wheel of steel bronze and pistons of gray cast iron

[illegible]

The Ellsworth motor is of the conventional four cylinder motor type, with the motor mounted in front; on the chassis frame—without the use of a sub-frame—so set that the motor does not extend in front of the front axle; in fact, the cooler of the square tube type is placed so that its front face is on a line with the front axle. In this way the weight of the motor is between the two axles. This also improves the steering of the car

The transmission is of the four speed selective type, direct on the high gear, with enclosed differential gears of the bevel type; the reverse is the same as usual in transmissions of this type. The side chain drive is used on most of the cars, but a shaft drive car will be offered to those who prefer it.

The details of the shaft drive will be

degrees, and flattened under a steam hammer.

BEARINGS.

All bearings are of the annular ball type, including the crank shaft and the cam-shaft, only the connecting rod ends are plain bearings. The respective ball bearings are housed in and separately lubricated and their sizes are in every instance in excess of the conservative ratings of the makers.'

The thrust loads are taken on thrust bearings. The wheel hubs are of alloy steel and the ball bearings are therefore backed up by a hard resistant metal, instead of cast iron as is often the case. The ball bearings are especially large and well mounted; moreover they are fitted with safeties.

The single cam-shaft does not pass thru the motor case but does pass across the top of the cylinders, in a separate housing in which the ball bearings are fitted, and are submerged in oil

THE CRANK SHAFT.

This highly important member is a special grade of chrome nickel steel, of the built-up type as patented by J. M. Ells-

worth and T. J. Fay, and offers certain special advantages not present in the run of ball-bearing crank shafts, because bending moments are eliminated, and the fitting of the respective members of the crank shaft may be done with great accuracy by men of average skill. The ball bearings are fitted directly to the crank members without the intervention of any separate packing member. The joint comes so that the respective throws are independently supported by the ball bearings, and the "torque" (double taper non-bottoming) pins, are not required to perform a double service, as is usually the case. The crank-shaft may be disjointed at will without the use of any special tools and the ball bearings inspected. No skill is needed to take the crank shaft apart, nor can any mistake be made in assembling

If a throw is ruptured it can be replaced quickly, instead of requiring an entirely new crank-shaft However, this crank-shaft is guaranteed against breakage from any cause in service, and any part of it that does fail in service will be replaced free of any expense. The ball bearings will have a long time guarantee placed upon them.

The magneto, timer carburetor, spark-coil, Speedistimeter and time-piece in the Ellsworth car are all in a water tight housing, forming the dash-board and accessible from the seat at will. What motorist has not used bad language when the timer of his car (located under the hood) filled with muddy water and refused to work? or who can say he has escaped carburetor trouble from the same cause? This arrangement absolutely protects all these delicate parts, and at the same time places them in a more accessible position

To attain these advantages the cam shaft was designed to pass over the top of the cylinder, thru into the accessory housing, not with added complication, but with a positive reduction of parts. The makers point out that they have not designed a new type of car, but have removed the many fallacies that every motorist has long known to have existed. In doing this it was necessary to avoid the use of standard parts, however good they might seem to be

The cars will have various weights according to bodies and equipments, but the maximum weight will not exceed nineteen hundred pounds. This weight considering a forty horse-power motor settles the question of hill climbing ability. The standard equipment consists of Continental tires 920 mm. by 120 mm. for both the front and rear wheels. The reserve ability, considering the low weight of the car is very large. Because the front and rear tires are the same size, considerable tire economy will result.

Fig. 1. Some of the Ellsworth Car chrome nickel steel parts with flanges. All flanges wherever possible are an integral part of the members.

Fig. 2. The Ellsworth Rear Wheel and Steering Link. Attention is called to the fact that the sprocket drums are of special auto steel, and the link as all other parts of the steering mechanism, is particularly sturdy.

THE CLUTCH

The clutch is of a special patented design. It consists essentially of a hardened cone shaped drum attached to the driven shaft and a spiral band attached to the driving member. The whip end of the Ellsworth tapered spiral band is pinched between the drum and the housing, due to

a difference in the angle. The result is, the band constricts, when its tail is pinched, and the motor winds it up. All the members are of chrome nickel steel, and suitably heat treated to afford the requisite qualities. The clutch runs in oil and requires no adjustment at any time. It is said to behave nicely, can be made to slip at will, holding like "grim death" when the members are in full contact.

THE BRAKING SYSTEM.

Besides the regular "differential" brakes and the "emergency" brakes the car is equipt with "auxiliary differential brakes." All brake drums are heat treated and of special auto steel with large surfaces. The brake bands are of special auto steel lined with pure annealed copper, with ready and effective means of adjustment. The equalization of the emergency brakes is effected without introducing an inertia component such as follows the use of equalizing bars, but the brake cable used does not thread thru a tube and therefore does not "bite" or bind on the abrupt turns. The side levers and foot pedals are of chrome nickel steel. The levers and the pedals are accessible and the amount of movement required to render their operation effective, is well within that said to be desirable by motorists of experience. The brakes are not "water-cooled" because they are so designed as to render this complication wholly unnecessary, and on the whole, it is not a good idea to have water circulation, because the chances of a freeze-up are imminent, and loose water connections are not unknown to motorists.

THE STEERING CONTROL.

The matter of steering is taken care of in no uncertain way. All the linkages and the lever arms it is claimed are of chrome nickel steel, free from joints and brazing and safeties are also provided.

This steering gear is claimed to be a distinct advance, to be absolutely irreversible, and devoid of "lost motion," moreover it will not develop lost motion, even after a long period of service. The gear system is also patented and consists essentially of a right and left double spiral, with a thrust component, and a square cut gear set that takes the load, thus relieving the spiral set of any of the shock or the pressure.

The steering wheel is of steel with a mahogany rim, and the wood is so fashioned as to give the motorist a good grip. The steering post is of chrome nickel steel, without brazing. The control system mounted on the steering post enables the motorist to operate the control members, with either hand, without taking either hand from the steering wheel. These control members are fixt and do not rotate with the wheel, so there is no chance of becoming confused. The whole operation is dependent upon the motion of racks that pass thru a suitably disposed housing under, and to the front of the wheel. Since the racks pass clear across the under side of the wheel, they may be manipulated by either hand at will; but since they are very close to the wheel rim it is possible to operate them with the fingers without taking the hand off the wheel. The control linkages are all enclosed, but still very accessible.

THE CARBURETOR.

This most important device will not be described in any great detail, at this time. It is of the automatic variety operated on the float feed principle, and the gasoline nozzle is not adjustable. Hot air

Fig. 4. Ellsworth Bronze Flywheel, and cast integral fan blades.

is supplied to provide the initial mixture, and cold air is automatically added to dilute the mixture in the right proportion as the speed of the motor accelerates. Altho the carburetor is automatic it can be manipulated at will.

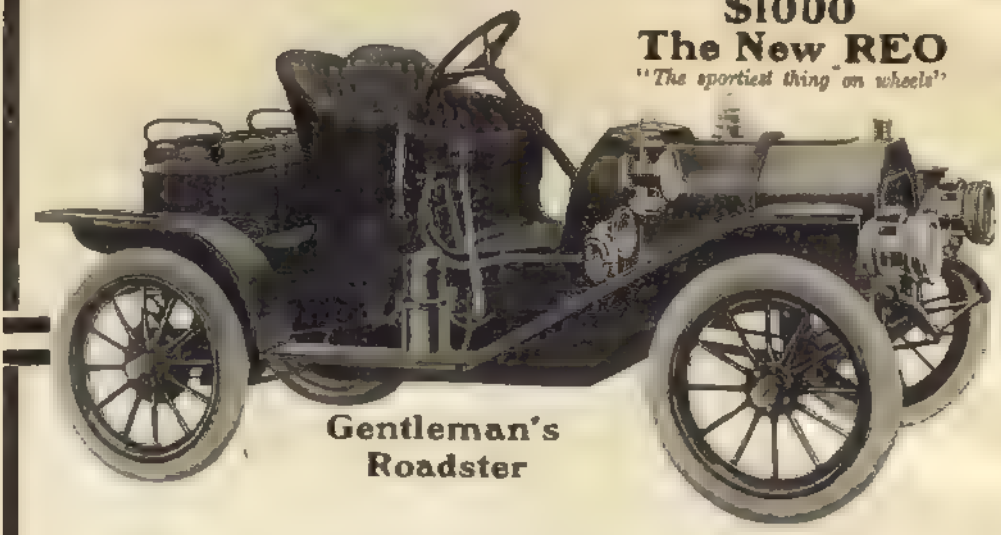
THE SPRINGS.

The chassis springs are full elliptic rear and of the three-quarter type in front. They are of Krupp alloy steel, without hinge joints, which is a new feature. It is claimed they are "unbreakable" and that they provide an easy riding car.

"Sims-Bosch" magneto and a complete double system of ignition are used. The water pump is of the "centrifugal" type. The oiling system is new and every bearing is doubly provided for automatically. The oil pump is in the motor case and well protected, and is of substantial build. However, if anything ever does happen to it, the car will run just the same.

The gasoline tank is located in front of the rear axle, with fourteen inches ground clearance, and the gasoline is required to pass thru a water and dirt filter before it can get into the tank, which is of ample capacity, and securely fastened to the chassis frame. An automatic "Mercedes" pressure regulator, maintains the gasoline pressure at the desired point.

$1000
The New REO
"The sportiest thing on wheels"



Gentleman's Roadster

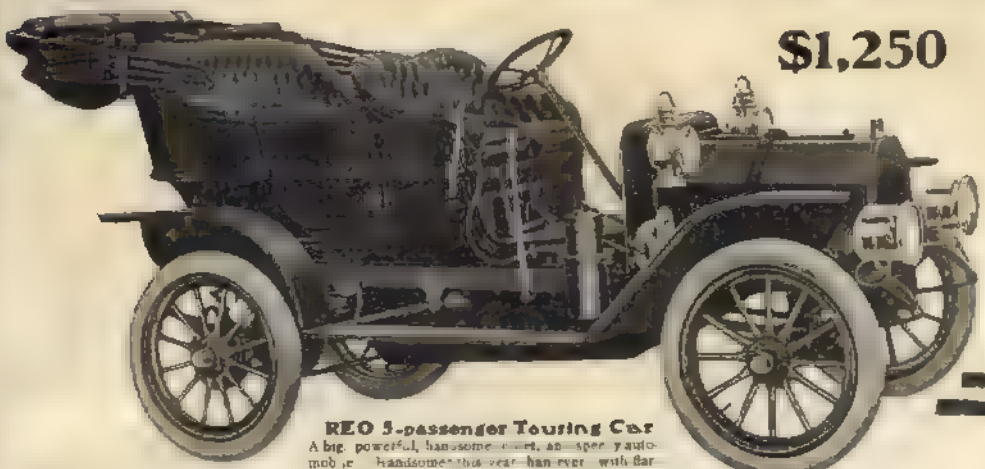
REO

Three models for 1908

Every one with the same positive, powerful REO engine-design and strong, clean-cut, practical construction, that has made the REO in its first three years take more prizes and give more *sur*prises than any other motor-car ever built.

Write for book that tells the whole story.

The new REO Gentleman's Roadster shown above is the 1908 sensation of the roadster class. It has the touring car chassis with a special-design body. Is higher geared, lighter, and sets low; with rakish seats, a trunk-box in the rear—convertible into a 2 passenger seat, flaring, protecting fenders, and 32-inch wheels. And it actually makes 45 miles an hour. More "go" than was ever before sold for the price. **$1000** f. o. b. Lansing.



$1,250

REO 5-passenger Touring Car

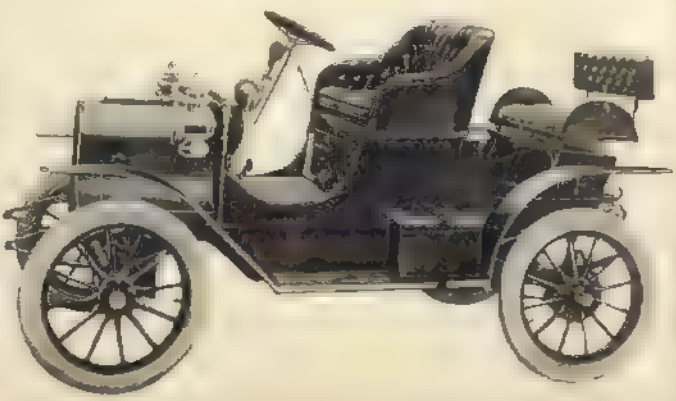
A big, powerful, handsome, quiet, and speedy automobile—handsomer this year than ever, with flaring metal fenders and protecting sides. New type mufflers make it the car absolutely quiet. Muffler cut-out. Spark and throttle on the steering wheel in addition to foot control. Improved and perfect rumble. 32-inch wheels, 3½ inch tires and other minor improvements. **$1250** f. o. b. Lansing. Top $60 extra.

1908

It was a REO in the latest Glidden Tour that beat 48 cars of double and triple its price including 24 that cost $4000 and upward. Every beaten car cost more than the REO. A REO was the only car at its price, and with one exception the only car at less than double its price that finished with a perfect score.

REO Runabout.

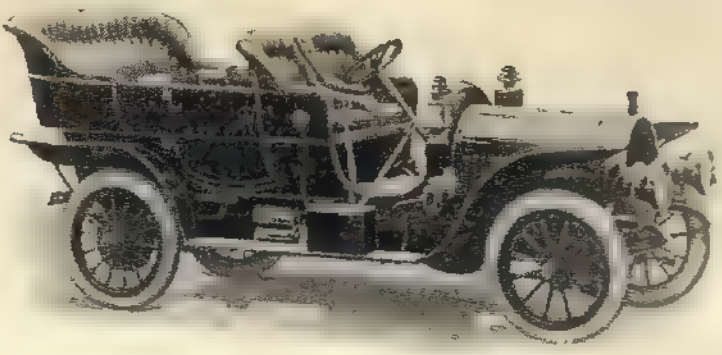
Mechanically the same mechanical construction as last year's popular car made. But with better equipment and fitted with the same design hood, fenders and connecting running board as the touring car including folding seat. **$650** f. o. b. Lansing



R. M. Owen & Co.
Lansing, Mich

General Sales Agents for the REO Motor Car Co.

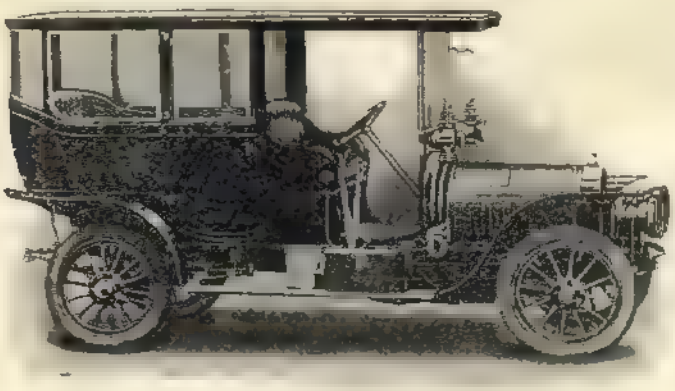
ROYAL TOURIST



1907 MODEL G—SERIES 2

Touring Car, $4,000 **Limousine, $5,000**

Both Seven Passenger and Forty-five Horse-power.



Royal Double Ignition System—Royal Carburetor—Royal Fenders—Royal Advanced Improvements.

Our second edition catalogues contain reproductions of photos of all cars and parts with blue prints of every Royal detail. Send for it and learn what is essential to a perfect car.

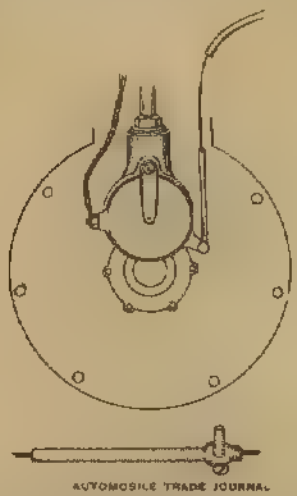
THE ROYAL MOTOR CAR CO.

CLEVELAND, O.

Member A. L. A. M.

We have some territory still open for reliable agents.

The main bearings of the motor are illustrated from oil reservoirs in the crank case, the reservoirs surrounding the bearings. The continuous oiling system is also retained. Hess-Bright and F. S. ball bearings are now used in place of the plain bushings heretofore used.



Commutator details of the 1908 "Merkel," showing the cover and its clamp; also the arm by which the commutator position is changed thru the medium of a wire actuated from the handle bar grip.

The muffler is fitted with a cut-out, which is operated by the foot of the rider, and the muffler is now placed up close against the crank bracket.

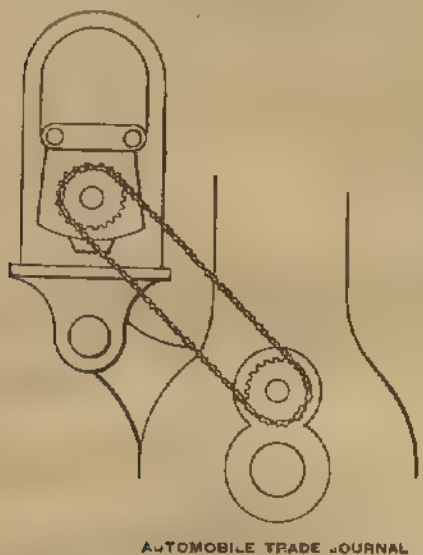
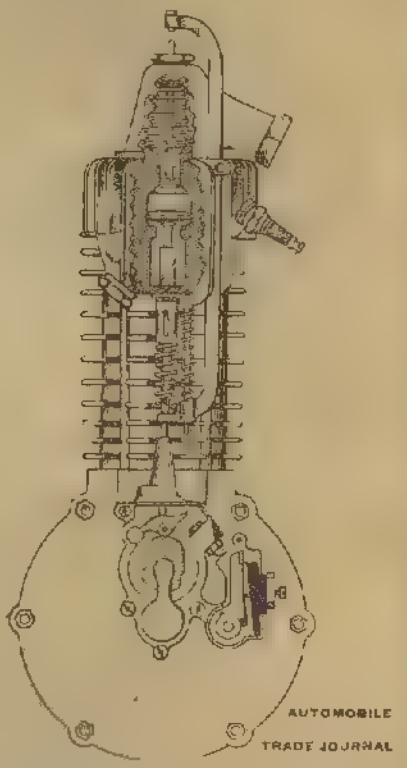


Illustration of the magneto drive from the commutator shaft on the 1908 Merkel motorcycle.

The price of the 1908 Merkel, including spring frame, but not spring fork, is $200; $15 extra is charged for fitting a spring fork.

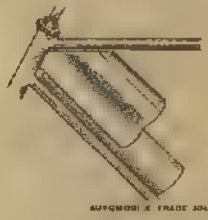
1908 Indians

The Hendee Manufacturing Co., Springfield, Mass. announces the following line of 1908 Indian motorcycles, single cylinder, 2¾ H. P., $200; single cylinder, 3½ H. P., $225; twin cylinder, 5 H. P., $250; tricar or delivery van on single cylinder, $325; on two cylinder, $375.

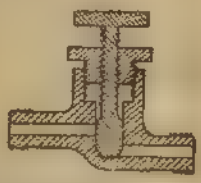


The New Indian Mechanical Valve Action

The smaller Indian engine has been increased from 2¼ to 2¾ H. P., and the two-cylinder from 4 to 5 H. P., and the 3½ H. P. is entirely new. All Indians are equipt with either mechanical or automatic valves, gear or chain drive, or battery or magneto ignition at the purchaser's option. The mechanical valve action



The New Indian Battery Case for three size 6 cells.



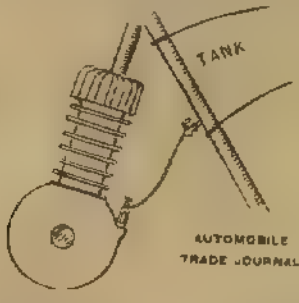
The Indian Gasoline Check Valve.

is fully shown in our illustration, by means of a bar which connects with both valve

The Indian 5 H. P. twin cylinder tri-car dee Mfg. Co., Springfield, Mass.

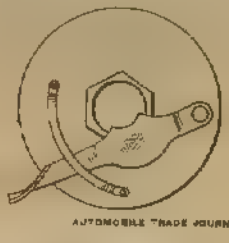
steins, one cam and push rod operate both valves. In the gear drive the gears are fully enclosed in a case.

Magneto ignition is supplied at an additional charge of $40, but an option of either No. 3 or No. 6 batteries is given without extra charge, a new type of battery case being furnished which will hold No. 3 and No. 6 cells. Another new feat-



The New Indian Sight Feed Oiler.

ure of the Indian is the gasoline shut-off valve, constructed on the needle valve principle, it is located on the supply pipe right at the gasoline tank, giving a positive shut-off without a leak. 1908 In-



The New Indian Muffler cut-out, operated by foot.

dians are also all fitted with the new muffler cut-out operated by the foot, the sight feed oiler for crank case, new style standard rubber motorcycle pedals, and improved G & J tires.

with passenger seat in the front, made by Hen-

The "Ever-Ready" Cycle Meter

The Auto Improvement Company, 316 Hudson street, New York City, has recently placed on the market a speed indicator gotten out particularly for the motor cycle and bicycle, and called the "Cycle-Meter."

The "Ever-Ready" Cycle Meter.

A driving gear is fitted on the spokes of the front wheel, and operates in conjunction with a sprocket on the Cycle-Meter. The Cycle-Meter is attached to the fork and adjusted to a position which will enable the rider to see the dial at all times. The dial is two inches in diameter, and the figures thereon are plain and easily read. The list price of the instrument is $12.00. The instrument is also furnished with a maximum hand, and so equipt lists at $15.00.

1908

Yale-California MOTOR CYCLE

"A MOTOR CYCLE IN EVERY SENSE OF THE WORD"

A card will bring our catalogue and agents' proposition. Better learn what Consolidated service means.

The Consolidated Manufacturing Co.
TOLEDO, OHIO

HONEST ALL THROUGH

That's one reason why the

Morrow Coaster Brake

BRAKE FOR CHAIN DRIVE.

is such a universal favorite. None but honest materials are used. It is constructed honestly,—does not fall apart under severe stress and strain; and gives you honest service, since it is a brake that really brakes.

Don't trust your life and limb to a dishonest brake.

Get the MORROW.

ECLIPSE MACHINE COMPANY, Elmira, N. Y.

The 1908 Mason Car

The Mason Motor Car Co., of Des Moines, Iowa, are offering a new two-cylinder opposed car to the public. The general lines of the car are good as shown by the accompanying cut. The control is simple and it is claimed the car is a specially good hill climber. The general construction follows approved practice for this type of car, the engine being located lengthwise under the body and driving to the rear axle differential by a single chain. The engine is mounted on two steel channel cross beams to which it is bolted with ¾ inch stud bolts. The cross beam is riveted to the side angle and then reinforced by a 4-inch gussett placed so as to absolutely avoid all racking of frame or throwing engine or transmission shafts out of line, and the frame is also reinforced by the rear body hangers which are bolted to the side and rear cross brace. The side angles are 2x3¼ inches and tapered for 36 inches back from each end. This equalizes the vibration and avoids the breaking of angles. This motor is 5x5, the cylinders being finished by grinding. The inlet and exhaust valves are in cages in the cylinder heads and are operated by long push rods and rocker arms. The valves have heads and stems integral of nickel steel. The valve cages are easily removed, being held by brass spanner nuts.

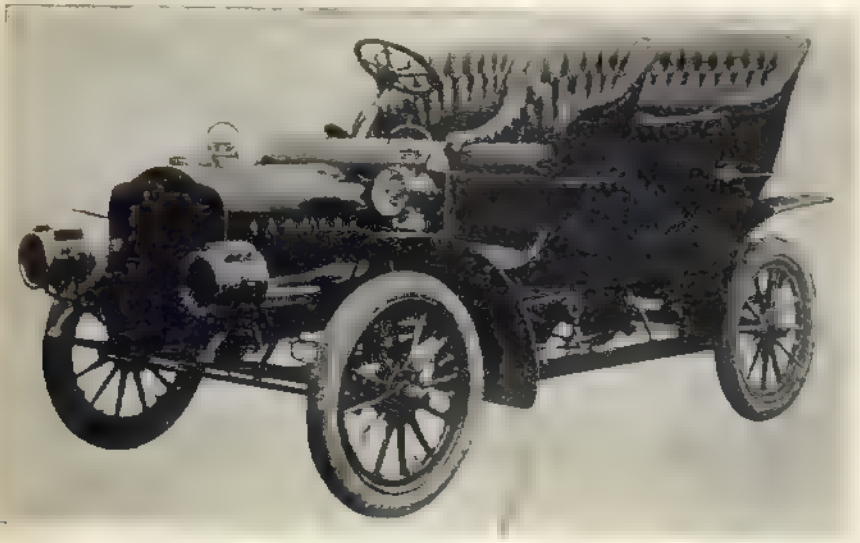


Fig. 1. 1908 Mason Touring Car, fitted with double opposed motor of 5-in. bore and 5-in. stroke, placed longitudinally under the body. 2-speed and reverse planetary change speed gear, single chain drive to the divided rear axle, wheel 32 inches and tires 3½ inches.

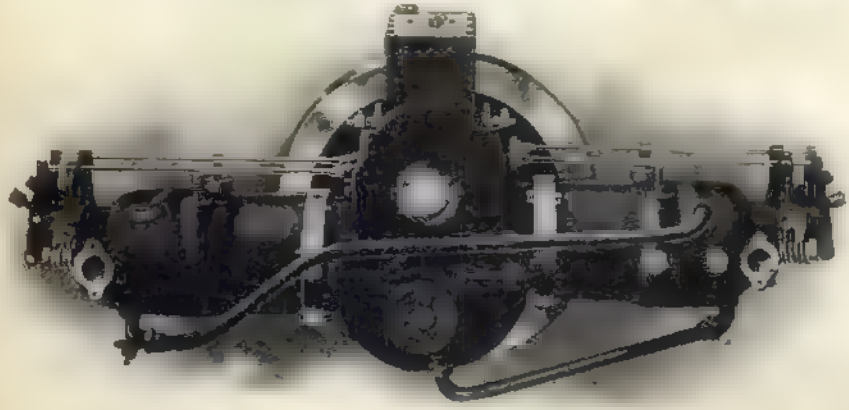


Fig. 2. The Mason double opposed motor. 5x5 inches, valves mechanically operated and both in the heads.

The cam shaft is in the usual position across the top of the crank case. The crank shaft is a nickel steel forging and runs in Parson's white bronze bearings,

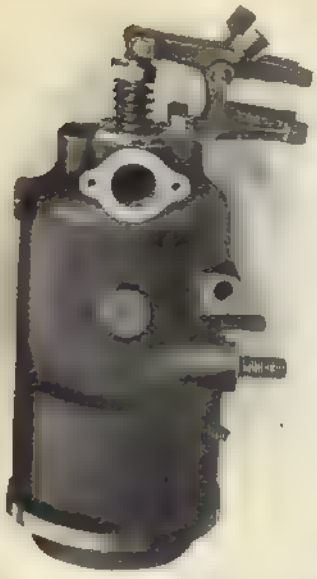


Fig. 3. Closer view of one of the cylinders which are finished by grinding; note the heavy integral lugs for supporting the engine and also note the valve mechanism on the head.

which are hand-scraped to insure perfect fit and alignment. The connecting rods are also drop-forgings, grooved to conduct oil to the wrist pin bearing which are also white bronze. The connecting rod caps are held in two studs by lock nuts and split pins. The pistons are long and carry at the top three step-jointed eccentric rings, locked to prevent their turning. There are two oil grooves around the piston, one at the centre and one at the lower end. The wrist pins are hollow. The motor, it is claimed, will turn up 2000 r. p. m., but best results are obtained at 1000 to 1200. At 900 r. p. m. the speed of the car is about 28 miles an hour

LUBRICATION.

The usual splash system is employed in the crank case, but in addition a Hill Precision Oiler mounted on top of the case and driven from the cam shaft, gives positive force feed lubrication in proper quantities to the upper side of the cylinders and to the main bearings.

A rotary pump on the end of the crank shaft forces water from the tank under the hood to the bottom of the rear cylinder jacket from the top of which it is piped to the lower side of the forward cylinder and thence to the special radiator of their own design, containing over 10,000 sq inches of radiating surface, with accessible tubes and soldered joints at corners

IGNITION.

The jump spark system, current from two sets of 6 dry cells each, is used. A commutator of their own design is mounted on the cam shaft, has wide contact surfaces and is so arranged that it is lubricated from the crank case oil.

TRANSMISSION.

The change speed gear is of the planetary type, giving the usual two speeds forward and one reverse, and is controlled by a single lever for low and high gear and by a foot pedal for the reverse. The mechanism is of the three pinion type, all the gears being cut true and case hardened. On high speed the motor runs 3.5-12 revolutions to one of the rear wheels and on low gear there are nine revolutions of the engine to one of the wheels

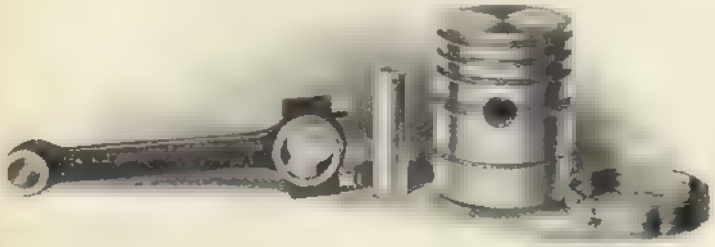


Fig. 4. Mason piston, pin rings and connecting rod.

The frame is of channel and angle steel

Fig. 5. Parts of the Mason Car planetary change speed gear

section, well riveted and braced. The road clearance is 10½ inches, the lowest point being the sprocket wheel on the rear axle and this is offset so as not to strike the ridge usually found in the middle of coun-

try roads. This is an important feature if country touring is intended.

CONTROL AND BRAKES.

In the control of the car the hand lever on the right side combines both low and high speeds and when this lever is pushed back it applies a brake on the rear axle, which is ratchet-retained and is released merely by pressing with the heel a small plunger rod which is situated in the floor directly under the driver.

The throttle and spark levers are situated upon the top of the steering wheel, where they are within reach of the thumb and fingers at all times without removing the hand from the steering wheel. The reverse speed is operated by the right foot pedal.

The left foot pedal disconnects the engine and applies a brake upon the rear axle that may be applied at any pressure the operator desires.

A very prominent feature is that a person may use either the left foot pedal, the right foot pedal, or the hand lever at the side of the car, or any two of these, or all three of them for braking, as they all act as a brake upon the car.

The body is handsomely upholstered, being one of the features the makers pride themselves upon as well as the hill climbing qualities of the car. It is claimed nothing but the best leather and curled hair are used. The wheels are 32-inch fitted with 3½-inch tires. The equipment consists of two gas lamps and generator, two side oil lamps and tail light and a long tube horn.

The Packard Factory—Detroit

HUGH DOLNAR.

The Packard Company produced a total of 1129 cars from Sept. 1st, 1906, to June 1st, 1907, all either touring cars, limousines or runabouts. No Packard commercial cars were supplied during the time specified; the Packard Company has not abandoned the commercial car idea, but has been constantly building experimental trucks and delivery wagons, tho no final type of this class of motor vehicle has yet been fully decided upon as standard.

Of the 1129 Packard 1907 cars, 125 had both touring and limousine bodies fitted to the one chassis, making a total of 1254 car bodies of all three styles placed on Packard cars sold during the year. In addition the Packard factory is now filling orders for 100 limousine and 12 landaulette bodies to go on Packard cars of the 1906-7 models which were fitted with touring bodies only, these additional bodies will be completed late this summer. The Packard year ends June 30th. The Packard car bodies are composite constructions, wooden frame and sheet aluminum seat backs and panels, etc., requiring a very large floor-space in construction.

The Packard factories are among the world's largest, but not nearly large enough for the work in hand, and are now being increased by a new front building, reinforced concrete, 501x60 feet, two stories high. Something more than half of the first floor of this new front building will be used for the factory offices and the remainder will house the experimental department. This new front building faces south. The second floor will be occupied by the Packard general offices, at the west end, over the factory offices and the remainder of this second floor will be occupied by the drawing room and physical and chemical laboratories. The old offices in the southwest part of the previously erected Packard factory buildings will be used for factory offices when the general offices are transferred to the new front building.

Besides this new front building, now under construction, the Packard Company has this year added a third story to last year's front and east side buildings, 957 feet total length and 60 feet wide, also a connecting building, 128x60, three floors, now almost ready for use, which will be occupied by body-making and upholstering, and second stories have been added to two of the transverse buildings, each 200x50 ft. This added floor, 200x50 ft., on the west side will be used as the rough store room, and that on the east for a factory restaurant on the first floor and tool-maker's department on the 2nd floor.

A restaurant has been maintained for the past two years in the Packard factory, supplying about 300 meals per day. This restaurant was turned over rent-free to a keeper who supplied meals to workmen as a private business venture of his own This same man will have the new and very much larger restaurant on the same terms; the first was far too small to accommodate the workmen.

The Packard Company owns a flat plot of 23½ acres, with the Boulevard running thru it East and West, and Concord street bounding it on the east side.

The shops were removed from Warren, Ohio, to Detroit, early in 1903, and the Detroit buildings have been in course of enlargement almost constantly ever since, and when the new front building is completed the Packard factory will have 435,000 feet of floor space.

The original buildings are all of brick, all newer buildings are reinforced concrete.

The Packard pay roll has carried as many as 1846 names, which number will be largely exceeded in 1907-8.

The General Vehicle Company, of Long Island City, N. Y., heretofore manufacturers of heavy commercial electric vehicles, will add a light pleasure car to their productions. The new car is scheduled to make its appearance on the market early in the fall.

The Marvel Roadster

HUGH DOLNAR

The Marvel Motor Company, Detroit, Michigan, U. S. A., J. C. Foster, General Manager, William A. Phister, Factory Superintendent, will build about 325 of the new Marvel Roadsters, suitable for 2 passengers during the season of 1907. This com- [illegible] Gauge 55 ins. Tires at rear 3 ins. Motor, two cylinders 4x4½ ins. nominal 12 H. P. set crosswise far in front, under the hood. Planetary speed change, two forward speeds and a reverse, and a bevel gear to driven rear axles. Weight 1300 lbs. Price

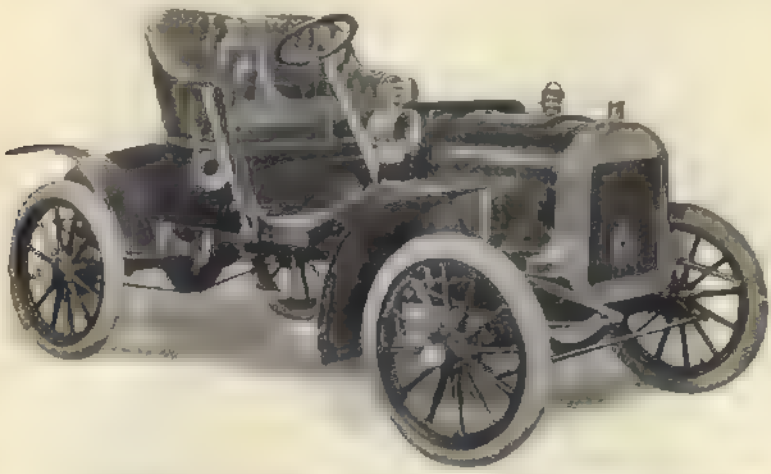


Fig. 1. The Marvel 12 H. P. Roadster. 2 cylinder Horizontal Cylinder 4x4½ ins. 2 Speed Planetary transmission, Wheel base 84 ins. Tires 30x3 ins., weight 1400 lbs. price $800.00

pany has a well-equipt factory at Rivard ave. Mullet streets, Detroit, and is building the chassis frames, motors and planetary gears of these new "Marvel" cars, which roadster of fine appearance, amply powered

$800.00, including mat, horn, tools and 3 oil-lamps.

The Marvel Roadster was designed throughout by Mr. William A. Phister, previously

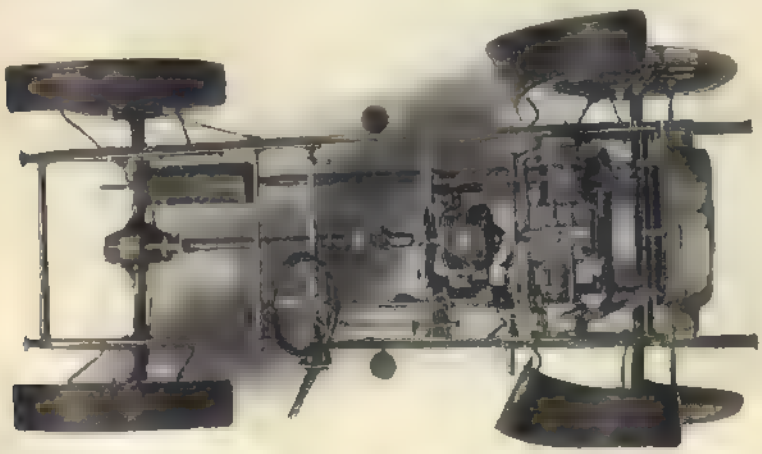


Fig. 2. Marvel, Chassis Plan

and offered at a price below that generally asked for cars of its quality. This car makes 35 miles readily, and being on four full-elliptic springs is very easy riding indeed. Its specifications are, wheel-base 84 unknown as a motor-car designer, and is an excellent example of sound selection and low cost construction.

The chassis plan shows the extreme simplicity of the assemblage. The chassis

frame itself is a single piece of angle steel, bent at two right-angles to form the rear end and sides, and united in front by a dropt cross-girt of angle steel which supports the radiator.

The motor, fan fly-wheel in front, has lugs on each cylinder head which rest on the chassis frame sides, three-point support of the propulsion assembly being had by a second dropt cross-girt which supports the line shaft just in front of the first universal joint of the line shaft. The motor is wholly of established form, cam-shaft on top, with the commutator on the rear end of the cam-shaft, everything of the simplest, and of the easiest construction. The fly-wheel is placed in front and has fan-arms. Everything about the motor is readily accessible and the construction is both simple and substantial thruout, with no needless parts nor joinings.

The Axles are by the A. O. Smith Company, divided axles on 2-point ball bearings, rear-wheels slipt on the cylindrical rear axle ends and retained by keys and pins. The front axle is a bent steel tube, with drop forged yokes brazed in, and the front wheels are on ball-bearings.

There is a torsion arm fitted, which does not appear in the chassis plan illustration. No struts are used.

The Marvel Roadster Springs are all full elliptics, all 1½ ins. wide; the front springs are 34 ins. long, 5 leaves, and the rear springs are 36 ins. long, 4 leaves, all tongued and grooved, all springs fixt to both the perches and the chassis frame.

THE CHASSIS FRAME.

This is of one angle steel bar, 20 feet long, two right angle bends in the rear, to form the frame rear end and sides integral. The chassis frame is parallel, 34 ins. wide by 103 ins. long. The angle steel frame stock is 2x1½x¼ ins., 2 ins. member placed vertically inside, and the 1½ in. member placed horizontally at the bottom. The front cross girt is of angle steel, 2½x1½x¼ ins., dropt 7 ins. to take the radiator. There is a sub-frame carried on 2 cross girts, top of sub-frame 5 ins. below top of the chassis frame. The sub-frame is made of angle steel 2½x1½x¼; the length of the sub-frame is 32¼ ins. long inside the sub-frame carrying chassis-frame cross-girts.

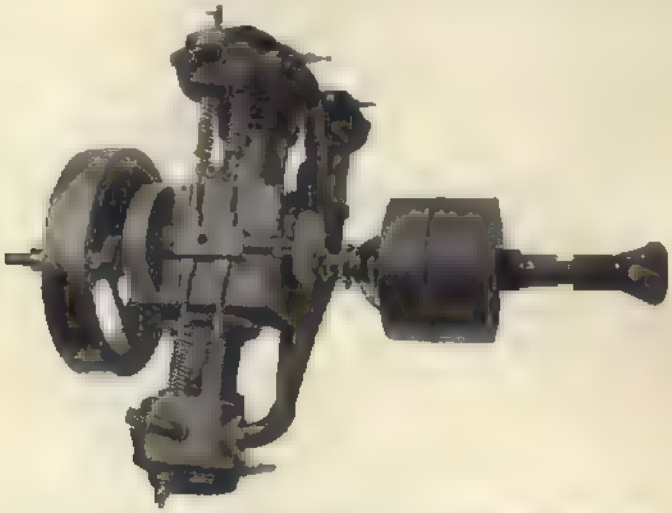


Fig 3. Marvel Roadster Motor, Change Gear and Prop. Universal Joint.

PLANETARY GEAR.

This is a design by Phister. The gearing is all spur, 4 planetary double pinions. The high-speed clutch cone moves away from the gear case to engage the 15 deg. angle leather-faced cone clutch, instead of the clutch-cone moving towards the gear case, as commonly seen. Because the cone moves away from the casing to apply the clutch

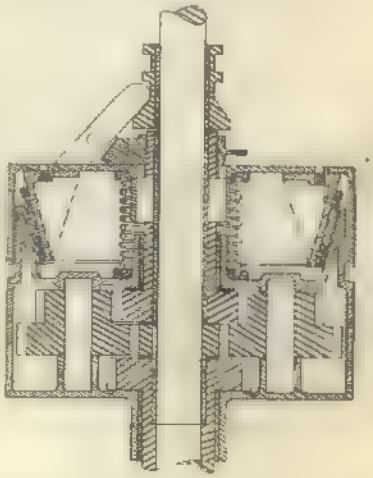


Fig 4. Marvel Roadster, Phister's Planetary Speed Change. The high gear cone moves away from the casing to effect the leather-faced, cone-clutch engagement for high speed.

the cam-action pulls on the bell-cranks, see Fig. 4, instead of pushing on them, making a vastly better and easier working linkage. The bell-cranks not only move in the best manner, but are of the easiest possible form to make, simply pieces of flat steel stock, with one end rounded and the other end cut on an angle to make the bell-crank action

RADIATION

The water circulation is Thermal only, often spoken of as "Thermo-Siphon," altho there is no siphon action whatever, the water simply circulating up and down in the radiating system chambers as it grows lighter by heating and hence rises upward, or grows heavier by cooling and hence drops downward. Many users of thermal circulation assert that the water pump circulated cooling-water cannot give as good results as the thermal circulation, which may demand the highest velocity of water circulation when the pump is running slowly. The writer knows no instance in which the change has been made from thermal water circulation to pump-circulation, but knows of many instances of change from pump-circulation to thermal-circulation with highly satisfactory results.

The Marvel propeller shaft is fitted with two of Blood Brothers' self oiling universal joints.

Brakes are exterior only, on the rear hub drums, are camel's hair belting lined and pedal applied

CONTROL

The steering is the Brown and Lipe internal worm, housing the worm gear.

The spark and throttle controls are had by two outside rockers set parallel to the steering post, forward and to each side of it, with rearward reaching ratchet retained hand levers on each one. These spark and throttle control levers each back around the steering post out to the rear edge of the steering wheel making a low cost and convenient placing of these controls, which looks well.

The foot board carries 3 pedals, the left hand one giving the reverse, the middle one applying the rear hub brake bands, and the right hand pedal giving the planetary low speed forward.

The high speed forward is had thru the single outside hand lever. The control is most convenient, is exceedingly simple, and all the control actions promise durability.

Lubrication is by a Baker and Crandall 4-lead oiler, gear driven from the camshaft.

Fuel tank is of galvanized iron, rectangular in form, 10 gallons capacity and placed under the driver's seat.

C. A. Benjamin Now With the Aerocar Company

C. Arthur Benjamin, so well known in the automobile industry, was recently elected vice president and general manager of the Aerocar Company, of Detroit, Mich., having resigned March 1 his connection

Mr. C. A. Benjamin, vice president and general manager of the Aerocar Co.

with the Babcock Electric Carriage Co., of Buffalo, N. Y., as secretary and sales manager. This acquisition on the part of the Aerocar Company further strengthens their already strong organization. Alex. Y. Malcomson, who founded the Ford Motor Company, is president of the Aerocar Company, and as both Mr. Malcomson and Mr. Benjamin are noted for producing large results, they make an especially strong team. Despite Mr. Benjamin's extended experience in the cycle and automobile trade, he is but 37 years of age. He commenced his business life in the Syracuse office of the Lehigh Valley Coal Co., and was then employed in the freight department of the New York Central Railroad where he afterward became chief clerk. At this time he took up the sale of bicycles as a side issue, and soon went into the retail business. Three years later he sold his interest to his partner, and became sales manager for the famous Stearns bicycles. Two years later he organized the Barnes Cycle Company, whose product, the "Barnes White Flyer," soon became so well known to the world. Later he resigned his position and pulled the Olive Wheel Company out of a financial hole for a bank which had been appointed receiver. Two years after this he got into the automobile game. He participated in the famous New York to Buffalo automobile run in the fall of 1901. He had opened the first garage in New York State in 1899, handling the Stanley steamer. Later he became associated with the H. H. Franklin Company as sales manager, and four years after this resigned from the Franklin Company and took the position of sales manager and secretary of the Babcock Company, which he has just resigned to go with the Aerocar Company.

The Reliable Dayton 1908 Cars

HUGH DOLNAR.

In August, 1907, the Reliable Dayton Motor Car Company purchased a factory site, 100x600 feet, Ashland avenue and Thirty-seventh street, Chicago, and now has a two-story and basement steel and concrete factory, 65x400 feet in process of construction, which will be ready for occupancy in August 1908.

The factory and offices are now located in the old Morgan & Wright factory and office building, 15 to 21 North May street, Chicago.

Work was begun on the 1908 Model E car, here first shown and described, about June 1st, 1907 and the first one was placed on the road about August 10th, 1907.

In Fig. 1 is shown this new Model E runabout. The wheel base is 84 inches gage, regular, 57 inches for middle west trade, and 60 inches for the Northwest and South. The wheels are 40 inches diameter front and 44 inches rear. The tires are all solid 1¼-inch Firestone. The motor, is a pair of opposed, 4-cycle, water-cooled 4¾x4 inches cylinders, nominal 12 H. P. The engine is set cross-wise under the hood, with "Gaeth" type of clutch to the line shaft and a two-forward-speeds-and-reverse sliding gear to the counter-shaft bevel gear, with an 8-spur-pinion balance-gear to the divided sprocket shaft. Diamond roller chains 1 inch pitch drive to the rear wheels, which have 10 inches diameter internal bronze rear-hub-drum brake-shoes, 2½ inches face. These bronze brake-shoes are about ¼-inch uniform thickness throughout, and are cam-rocker expanded. The regular body is of the covered buggy type, to seat two passengers.

The Reliable Dayton chassis frames are second-growth ash, 2x4½ inches in the middle by 3 inches depth at the front, and 4 inches at the rear ends. The car weighs 1100 pounds, and price is $780, including 3 oil lamps, mat and tools. The top is $35.00 extra as here shown; "Victoria" top, not shown, $50.00 extra. Acetylene lamps and gas-tank will be furnished to purchaser's order at prices agreed upon. This same model with a special coupe body is also furnished. The chassis is the same as in Fig. 1, weight about 1200 pounds. With this body the price is $1200, including three lamps, mat and tools.

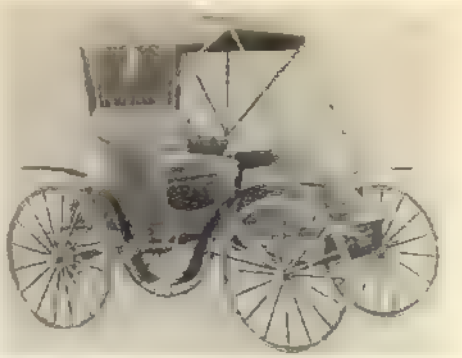


Fig. 1. The New Model E Reliable Dayton Motor [illegible] 4 3-8 [illegible], 4 inches [illegible] 60 R. P. M. water-cooled [illegible] with [illegible] the front. A special [illegible] power to a two-speed and one [illegible] sliding gear driving a divided drive shaft [illegible] Diamond [illegible] drive to the rear [illegible] the frame [illegible] ground [illegible] sprocket [illegible] Front wheels 40 [illegible] and rear 44 [illegible] carry [illegible] wheel base 84 inches [illegible] 57 inches standard, weight, 1100; price, with two oil side lamps, tail lamp and complete outfit of tools, $780 f. o. b. Chicago.

The Model F is a surrey, the wheel base is 98 inches, and save for some increase of weight at certain points the chassis is the same as that of Fig. 1. This model weighs about 1400 pounds, and sells for $925, including 3 oil lamps, mats and tools. The horn and cape top are extra.

Fig. [illegible] Model F Reliable Dayton is a Surrey somewhat heavier than Model E but with the same motor and chassis arrangements. The wheel base is 98 inches, weight, 1400 pounds. The price with lamps and tools, is $925 surrey top, as shown, $50 extra.

Upon the same chassis a light delivery wagon, Model G is constructed, but is somewhat heavier all thru. The wheel base is 98 inches, gage 57 inches, the front tires are 36x1⅝ inches; Firestone, solid, and the rear tires are 40x1¾ inches Firestone. The motor is a pair of 5x5 cylinders, set crosswise under the drivers seat, and develops 18 H. P. A sliding-gear speed-change giving two forward speeds and a reverse, transmits power to the divided sprocket-shaft, and 1-inch pitch Diamond roller-chains, drive to the rear wheels. This wagon has a paying load capacity of 1500 pounds and weighs about 1800 pounds.

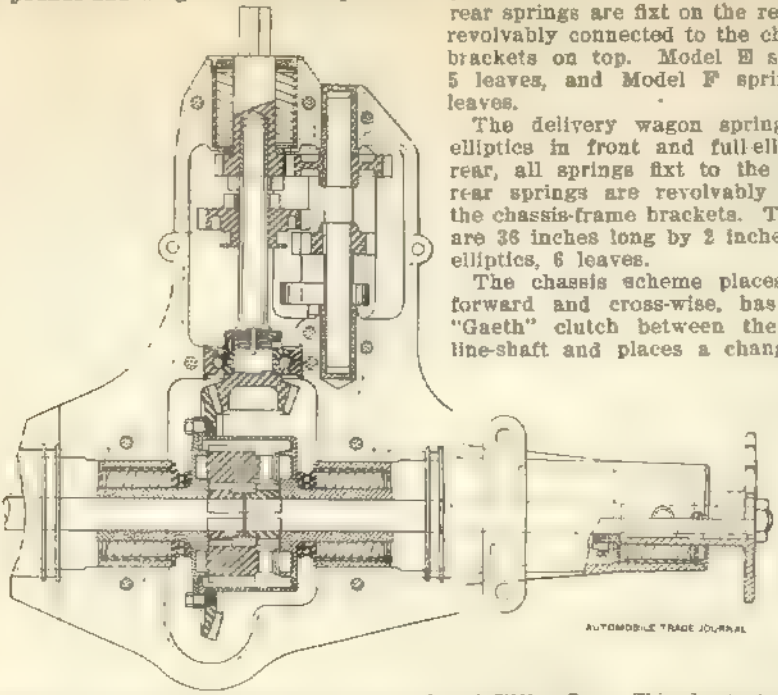


Fig. 3. 1908 Reliable Dayton Counter Shaft and Sliding Gear. This change speed gives two speeds and a reverse. The gears are 6 pitch. The jack shaft is supported in Hyatt roller bearings. All the gears and the differential are housed in an aluminum housing integral with the jack shaft housing the whole, forming what the manufacturers claim to be the most exclusive single piece of mechanism in any carriage type of automobile.

The price is not yet decided upon. The regular equipment will be three oil lamps and tools. Everything else extra.

NOTABLE FEATURES.

Up to these 1908 models, the Reliable Dayton cars have had angle-steel chassis-frames. This has been changed to wood as the stronger, lighter more elastic and more generally suitable material. The particular wood preferred is second growth ash. The corners are held with an outside, right-angle plate, which has a bottom member under the two pieces of wood, and a separate inside angle iron.

In the 1908 car a two speed sliding gear is used, instead of planetary. All wheels are on Timken roller bearings. Both the front and rear axles are solid square steel forgings, 1⅛ inches square in front, and 1¼ square in the rear. The use of rack and pinion steering is also new this year. All the cars have screw adjusted struts, flat joints front and rear. The passenger cars carry their opposed motors under the hood in front, instead of under the body, as formerly. The fuel-tanks of 10 gallons capacity are under the driver's seat. The delivery car has the motor under the driver's seat and carries the fuel tank, 15 gallons capacity, in the rear of, and below, the driver's seat.

SPRINGS.

The springs are all half-elliptics in front and scroll-head full elliptics in the rear. The passenger car front springs are 36 inches long by 1½ inches wide, and are jointed in front and linkt in the rear. The rear springs are fixt on the rear axles and revolvably connected to the chassis frame brackets on top. Model E springs have 5 leaves, and Model F springs have 6 leaves.

The delivery wagon springs are half-elliptics in front and full-elliptic in the rear, all springs fixt to the axles. The rear springs are revolvably attached to the chassis-frame brackets. These springs are 36 inches long by 2 inches wide, full-elliptics, 6 leaves.

The chassis scheme places the motor forward and cross-wise, has a modified "Gaeth" clutch between the motor and line-shaft and places a change-gear in a box integral with the aluminum counter shaft housing, as shown in the illustration of the counter shaft construction plan.

The steering is rack and pinion, vertical shaft and steering post. The passenger cars change-gear lever is horizontal and mounted on the steering post Pierce Great Arrow fashion. The truck changes the gear by an outside, latched hand-lever.

CONTROL.

The steering is by side lever and rack and pinion, vertical steering post. The spark and throttle are controlled by two vertical rockers, outside of the steering post, to which ratchet-retained, horizontal hand-levers are fixt close under the hand-wheel at the rear of the steering-post. The foot-board has two pedals, the left pedal disengages the clutch, which is automatically applied by a 100 pounds coiled spring of 100 pounds tension, when the pedal is released.

The right hand pedal applies the rear-hub brakes only. There are no brakes save the internal, hub-drum shoes.

THE 1908 CLUTCH.

The illustration herewith given so fully shows this clutch construction as to make an extended description needless. The two half bands, lined with metal or with fibrous material, are applied by two levers pivoted on one arm of a hub keyed to the line-shaft; the other arm, opposite the first arm, extending outside of the clutch drum circumference and supporting

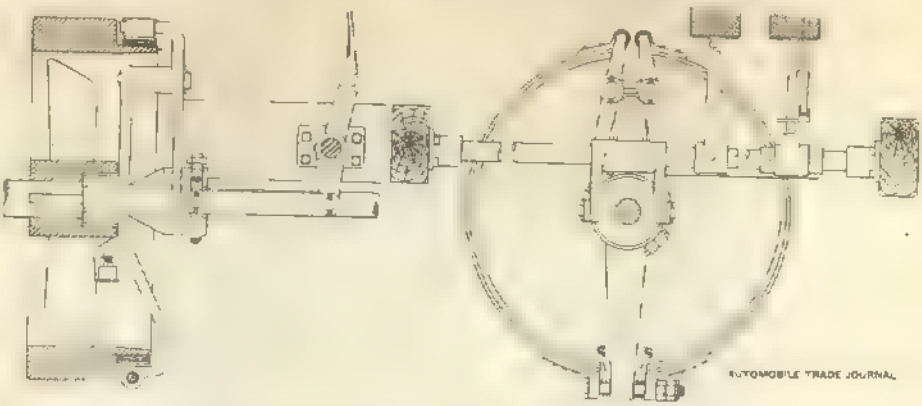


Fig. 4. Reliable Dayton 1908 Clutch. External contracting band, camel's hair lined. The original and unique features of this clutch are described in detail in the text.

the fixt ends of the two, constricting half-bands. The half-bands are forced into contact with the cylindrical exterior clutch drum by two levers having their short arms jointed to the free ends of the half-bands, while their long inner arms pass the shaft center and impinge the surface of the sliding cone, which forces the inside ends of the levers apart to engage the clutch by powerfully forcing the outer short arms of the levers to approach each other. The cone may be forced to the left by a heel-and-toe pedal or by a 20 pound coiled spring surrounding the line-shaft. Gaeth uses no spring, the Reliable Dayton clutch uses a 20 pounds compression, clutch engaging spring, not shown in these illustrations, which forces the clutch-cone to the left.

When the clutch cone is at the left extreme, the clutch is fully applied, the inner ends of the applying levers being separated to the widest extent. With the cone at the extreme right, the inside ends of the levers approach each other, separating the lever outer ends to the extreme, and so disengaging the clutch bands. To adjust the clutch, Gaeth filled the spaces at S, S, see clutch illustration, with washers, more or less in number as the half-bands needed for best effect. The Reliable Dayton places coiled springs in these spaces as shown, and adjusts the clutch by the bolt, nut and check-nut, shown with the springs mounted on the bolt body. It seems better to use the washers surrounding the bolt in the spaces, S, S, and pull the nut up hard.

This general form of clutch is the simplest, lightest, least costly and best in action yet noted by the writer. Most designers would probably prefer the coiled spring and normal automatic engagement as here shown, to the original heel-and-toe pedal action with no spring at all. One arrangement is about as low-cost as the other, and both work to perfection.

The only possible objection to this clutch is its exposure to dust, but with the flywheel cased in, as is done in some 1908 cars, and should always be done, this solitary objection dissappears. This form of clutch gives the largest exterior diameter cylindrical clutch face possible inside of the circumference of a given diameter flywheel, and so gives the greatest clutch-drum radius without exceeding the flywheel diameter for any part of the flywheel and clutch assembly. This condition means that the Gaeth clutch can be so constructed as to demand only the lightest possible brake-band surface-pressure for a given width, to transmit a given H. P. This clutch also places a very light weight on the line-shaft, and is extremely low-cost construction.

THE STEERING GEAR.

The Reliable Dayton goes back to the vertical steering post, with a rack and pinion steering action, and a horizontal change-gear lever, mounted on the steering post. This construction has many advantages, but does not look right to eyes accustomed to the steering hand-wheel

THE COUNTER-SHAFT

The frame work is a widely flanged aluminum alloy casting, divided in the horizontal plane of the shaft axles. The bevel pinion shaft is in a 4-point ball bearing next to the pinion; the change-gear is also housed in this counter-shaft casing, with the side shaft on plain bearings. Everything else is on Hyatt rollers, and the balance gear is 8 spur-pinions, with ball thrust bearings for the bevel gear.

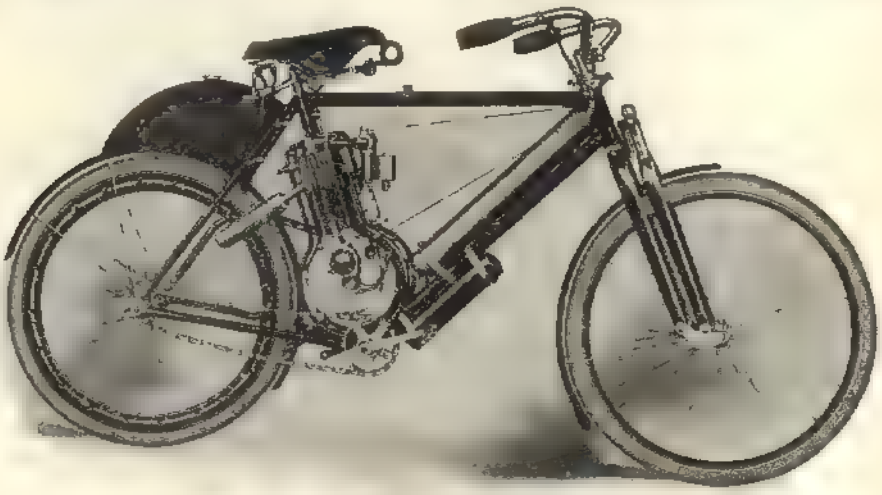
they are likely to have some sort of trouble and blame the machine accordingly. A short ride is the surest way to get up enthusiasm

"Let people see you using the machine constantly for every day purposes. After several weeks use, people notice that your machine is always in order and is clean and attractive, and that you do not have to wear old clothes.

"5—Organize a motorcycle club in your town, or join it, if they have one, and win a few contests. There is nothing like beating a man to make him want a better machine. Notices of motorcycle club runs may be put in the local paper free of charge, and will arouse general interest.

The "Royal" Motor Cycle

The Royal Motor Cycle Works, Inc., Worcester, Mass., is now ready with the "Royal" motor cycle, which has been in process of development for a long time, and is now offered the public after the most painstaking testing and attention to every detail.



The Royal Motor Cycle.

The frame is made of seamless steel tubing thruout, the main tubes being 1¼ inches in diameter and the stays ⅝ inch. Two bars of steel pass from left to right at the top of the motor cage, and are brazed in. Midway on these plates is bolted a strip of spring steel, running fore and aft, and the top of the motor comes to within 1-64 of this retaining bar. A heavy hexagonal-head bolt passes thru the bar and screws into the center of the head, binding the plate firmly to the motor. Thus while the slightest side or forward movement of the motor is made impossible, there is a certain chance for "mechanical life" between the motor and the rider which is beneficial to both. The four tubes enter pockets on and are brazed to the crank-hanger. On the hanger are four lugs machined to fit recesses in the motor base, and thru these lugs and the base pass hardened bolts, retaining the motor in exact relation to the transmission.

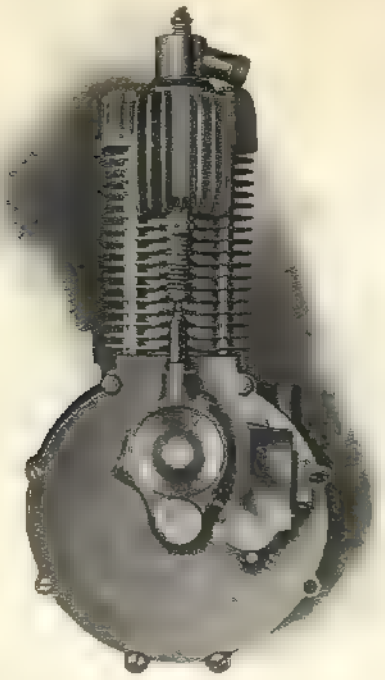
The motor is driven by a "V" belt, cut at 28 degree angles, ⅞-inch wide at the top, and is fitted with internal blocks to give flexibility. These belts fit the pulleys perfectly, and are claimed to be practically free from slip. No idler is required.

The Royal is fitted with straight cushion forks, which are of new and interesting construction. They work in double hinges at the bottom, the weight being carried on springs in the head on the forward fork. This construction gives smooth riding, and is said to entirely eliminate wrist fatigue. All side-play is also eliminated.

The carburetor used on this machine is a Royal product, and is claimed to give a perfectly dry and uniform mixture. The throttle, when closed, allows just enough air to pass the spraying post to pick up sufficient vapor to give satisfactory explosions. As the spark is advanced the proportions of the mixture remain the same. The vertical spraying post is surrounded by a tube thru which the primary current of air passes, encircling the post, and, as the throttle is opened, this current increases, picking up the normal flow of gasoline. At the point of increase, however, where the speed of the air would ordinarily become so great as to cause too much suction, thus drawing up too much fluid and causing a smoky engine, two auxiliary air ports in the shutter, one on each side of the tube, open, and continue to open as the speed increases, diluting the mixture to the exact requisite degree, thereby giving an explosion of the

same intensity, whether the speed be four or forty miles an hour. The Royal carburetor has very few parts, and they say can easily be taken apart, cleaned and reassembled in two or three minutes.

The battery case is made of 2¾ inches seamless brass tubing, heavily plated, and is long enough to hold three standard dry cells. A Splidorf coil, 2½x10 inches, is used. The hubs, front and rear, are of heavy construction, and are the product of the Eclipse Machine Company. This company's "Morrow" coaster brake is also fitted. In the rear wheel forty spokes are fitted, and in the front wheel thirty-six. The tires are G & J 2½-inch double clincher type.



Hafelfinger Motor used on the Royal Motor Cycle.

The Royal grip control is made entirely from steel parts, milled and machined from solid stock, and is designed to operate properly at any angle at which the handle bar may turn. The right grip, when turned to the left, closes the exhaust valve and advances the spark. The left grip, when turned to the left, opens the throttle, giving more gas to the engine. The grips are of good proportion, made of soft rubber and covered with calf skin, cemented on and hand-stitched. The bars are 14-gage seamless steel tubing fitted with separate bolts for operating the expander and holding the bar.

The wheel base is 52 inches, which length is claimed to make an ideal riding machine, steady enough for a forty-mile pace on country roads, yet not too long for getting about in city traffic.

Light 1908 Motorcycles

Light Manufacturing & Foundry Co., 507 Queen street, Pottstown, Penna., will market three models of the "Light" Motorcycle for the 1908 season. Model "A" is a single cylinder, 2¼ H. P., chain driven machine; model "B," a 3 H. P., single cylinder gear driven machine, and model "C," a 5 H. P., double cylinder, gear driven machine. The three motors are all "Thor" products, made especially for the Light Company.

The newest feature on models "B" and "C," is the gear drive which is a part of the motor and contained in the motor base, comprising a spur gear which is attached to the main shaft of the motor. The motor shaft runs on roller bearings. The pinion engages with an internal gear of large diameter. This internal gear is cut on the inner surface of a large disk which has a center to which the drive sprocket it attached. The center of the side to which the gear is cut forms a shaft which sets in ball bearings. The outside diameter of this internal gear also runs in ball bearings, thus the friction of this drive is reduced to the smallest fraction, and as it is contained in any a part of the motor it is impossible for it to get out of alignment or adjustment. It is constantly running in oil which is supplied from the motor base, thus making it absolutely silent. The device is not an experiment, but has been tested out in a motorcycle for the past eight months over rough roads and has been adopted and used in compressed air motors where pneumatic tools are used and subjected to greater abuse.

In connection with this motor is used a new design of muffler called "Radio," manufactured by the Light Company. The discharged gases are past into a tube or chamber, where it is divided among a number of ⅜ inch tubes which are exposed to the air. These carry the gases into a smaller chamber and then out into the open.

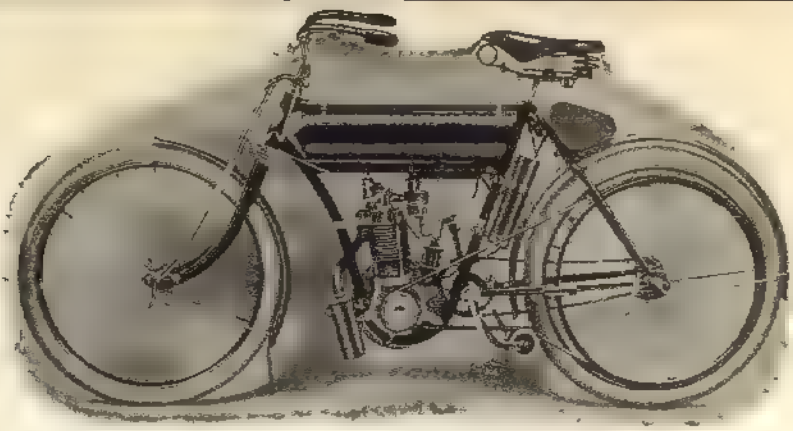
All three models will be equipt with up-to-date grip controls. All the models have new design drop truss frames and a new type of tank designed to hold gasoline, oil and three standard dry cells.

The arrangement of the coil on these models is such that the wires are very short, and placed in close communication with the motor and batteries, for the purpose of obtaining longer battery service.

All chains used are of ⅝ pitch. The regular equipment includes G and J 2¼-inch tires; 2½-inch tires being extra. Sager spring forks are used on all of these models.

The Light Co., is in position to make immediate delivery of the 2¼ and 3 H. P. models, and April 1st, delivery on the 5 H. P.

Illustrations and detailed descriptions of all three models will appear in an early issue of the Journal.



1908 YALE-CALIFORNIA MOTOR CYCLE---Price $185

In the Endurance Contest New York to Providence, R. I. July 30 and 31, 305 miles. Three Yale California Motor Cycles entered and all three came through on time at every control making a showing not equalled by other makes double its power.

This is proof of Yale-California reliability.

A Card Will Bring Our Catalogue. **We Ship Promptly**

THE CONSOLIDATED MANUFACTURING CO.
TOLEDO, OHIO.

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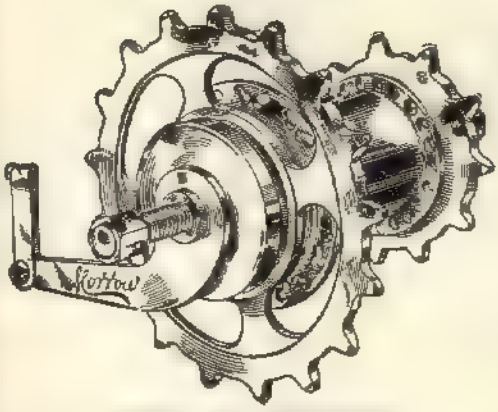

BRAKE FOR CHAIN DRIVE.

Our customers have been shown, year after year, that the MORROW COASTER BRAKE is absolutely the most reliable device of its kind in existence. It is made not only for use, but for abuse and because of this fact it has stood the test of time and become universally popular. The wise dealer and manufacturer acknowledges THE MORROW as leader; he handles it exclusively.

Write for Printed Matter.

ECLIPSE MACHINE COMPANY, Elmira, N. Y.

Second Imperial 1908 Roadster

HUGH DOLNAR.

The Imperial Motor Car Company, Williamsport, Pa., U. S. A., was incorporated in 1907 to take over the business of the Williamsport Engineering Company, which had a high-power, high-class car on the road in January, 1907.

It is the present intention of this company to confine its production to one single chassis only, fitting this one chassis with three-seat and four-seat roadster bodies, and devoting all its talent and energies to making these Imperial Roadsters the equals of any cars of the same class built anywhere in the world believing that the production of the best motor car demands the focusing of the entire abilities and resources of the constructor on a field of limited area.

The Imperial factory is a fine brick building constructed specially for the purpose, in Williamsport, and equipt with carefully selected best American machine tools. The shops are well lighted and capable of producing excellent work.

DESIGN FEATURES.

These Second Imperial Roadsters are designed along the best lines of conservative motor car engineering, with full recognition of the latest advances in the art controlled by a rigid determination to place no component in the Imperial chassis except such as extended road work has shown to be highly efficient and thoroly reliable.

THE "DOUBLE DROP" CHASSIS FRAME.

Raising both ends of the chassis frame above the level of its middle part is a valuable new improvement in motor car design, is original with the company and appears in no other motor car chassis, either American or Foreign built. This raising of both ends of the chassis frame obtains the important advantages of giving axle clearance and lowering the center of

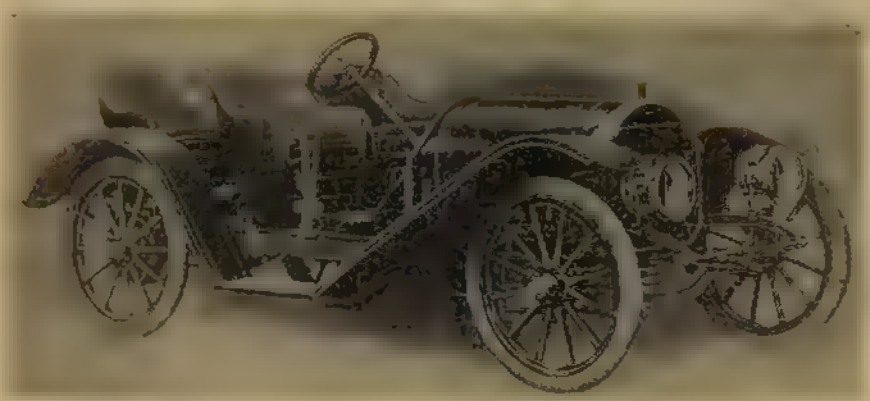

Fig. 1. Second Imperial Roadster, 1908 Model. Four-passenger body, wheel-base 108 inches, gage 56 inches. Tires all 36x4 inches. Motor, four cylinders, 4¼x5¼ inches. 35 H. P. Sliding gear 2 speeds forward and a reverse, with bevel gear to full-floating divided rear axles. Dixie magneto. Weight of Second Imperial Roadsters, 2450 pounds. Price, $2,750 [illegible] acetylene lamps, one oil lamp, mats, horn and tools, all ready for the road.

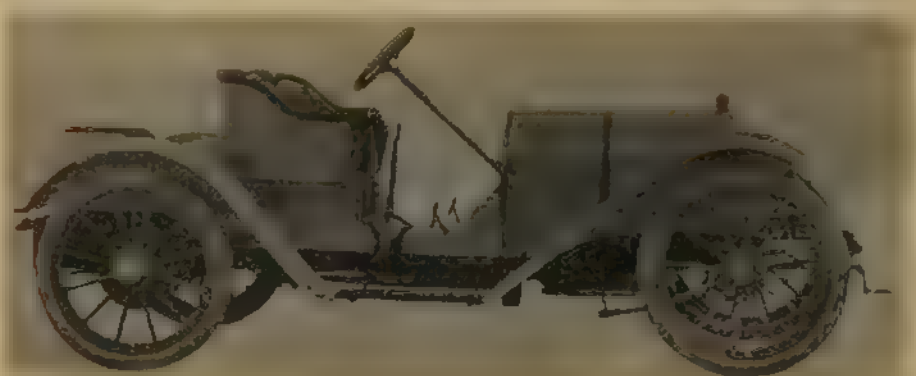

Fig. 2. Second Imperial Roadster 1908 Model to seat three passengers, folding rumble seat. Same specifications as Fig. 1. Price $2500, with two acetylene lamps, one oil tail-lamp, mats, horn and tools, all ready for the road.

gravity of the car load, thus conducing to both the comfort and safety of the occupants.

Many makers raise the rear end of the chassis frame, but the Second Imperial is the only car yet shown in which all the advantages obtainable from varying the top levels of the chassis frame are secured.

The axles are from special Imperial designs, built by the Long Arm System Company, Cleveland; the rear axle is a tubular steel construction, with a steel casting gear housing and full floating divided live axles. Both struts and torsion arm are fitted, the rear springs being linked at both ends to the chassis frame.

All the springs are half-elliptics. The

ster. The motor and gear-box are placed on a sub-frame.

BEARINGS.

All wheels are on 2-point ball bearings. The motor bearings are white-bronze, plain. The line and side shafts are on roller bearings. The bevel pinion shaft and balance gears all on roller bearings with disk ball bearings to take thrusts.

Fig. 3. Second Imperial Roadster chassis, 1908 Model, side elevation. The rise of the chassis frame at each end corresponding spoken of as the "double drop" seats the passengers low, and so obtains a low center of gravity, and also makes it convenient to drop the sub-frame carrying the motor and gear-box to such a plane as will bring the propeller-shaft about horizontal when the springs carry their normal load. The low center of gravity and the very small propeller shaft angle are highly desirable features.

The propeller shaft is fitted with Spicer Universal joints, and the double rise of the chassis frame sides brings this shaft about horizontal with a medium load on the springs.

THE MOTOR.

The cylinders, 4-cycle, water-cooled, are dual-units, 4½x5¼ inches, 35 H. P. The

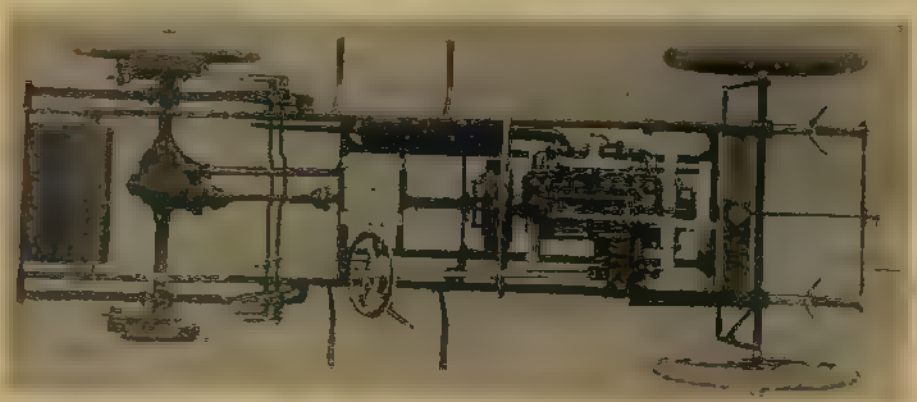

Fig. 4. Second Imperial Roadster chassis plan. The chassis frame sides are parallel avoiding sagging and reforming and the dangers of failure from bent sides. The sub-frame is substantial and gives ample support to the motor and gear-box. The brakes are applied thru wire cables, looped thru tubular steel rock-shafts. The front springs are under the frame sides and the rear springs are outside of the frame sides. The full tank, 13 gallons, is carried in the rear.

prest steel chassis frame sides are parallel, with the side raised over the axles at both ends, so as to keep the center of gravity as low as may be, a vitally important requisite of the high-speed road-

ignition is double, one set of spark-plugs, with storage battery and Eisemann magneto.

All of these particulars show a car fully up to the latest tested and approved prac-

Hol-Tan Gasoline Cars

HUGH DOLNAR.

The Hol-Tan Company, New York City, will offer for the season of 1908 two, all new American models of motor cars, a seven-passenger, tonneau body, called the "Hol-Tan Special," together with a five-passenger touring car, the "Hol-Tan Standard." The standard chassis will also be fitted with two, three or four-passenger roadster bodies.

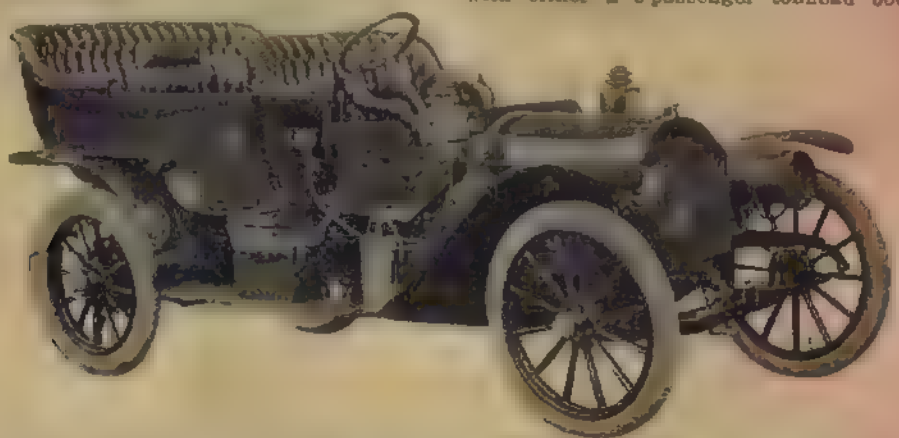

Fig. 1. Hol-Tan 1908 7-passenger touring car. Wheel base [illegible] inches, gage 56 inches, tires 36x3½ inches front, 36x4½ inches rear, sliding gear, four forward speeds and a reverse, Moores selective, with bevel gear to divided, floating rear-axles. Motor four 4½x4½ inch cylinders, 4-cycle, water-cooled. Hol-Tan rating 25 H. P., A. L. A. M. rating 32 H. P. "Regular" body as here shown, weight 2900 lbs. tanks filled. Price $3[illegible]0 including magneto ignition, five lamps, mats, horn and tools all ready for extended touring. Cape top extra. Limousine, landaulet, coupe or cab bodies fitted to order.

The Hol-Tan 1908 chassis, will for the present, be fitted with one motor only, four cylinders 4½x4½-inch, A. L. A. M. rating 32 H. P., altho the company call it 25 H. P. Two lengths of wheel base will be made, 121 inches with 36-inch tires, 3½-inch diameter front, and 4½ inches rear for the "Hol-Tan Special," fitted with 7-passenger tonneau and enclosed types of body, limousine, couple, landaulet, or cab as may be preferred. These bodies will all be supplied to special order by Locke, Quinby, or Demarest, of New York. A 110-inch wheel base chassis, tires 34x3½ inches front and 4½ inches rear, same motor, four cylinders, 4½x4½ inches, will be fitted with either a 5-passenger tonneau body, or a two, three or four-passenger roadster body. This line of 110-inch wheel base cars will be known as the "Hol-Tan Standard" and will be fitted with regular aluminum bodies, as shown in the illustrations herewith.

Fig. 2. Hol-Tan "Standard" 5-passenger touring car. Wheel base 110 inches; gage 56 inches, motor, four cylinders, 4½x4½ inches 4-cycle, water cooled; jump spark ignition, magneto and storage battery. Hol-Tan rating 25 H. P., A. L. A. M. rating, 32 H. P. Tires 34x3½ inches front, 34x4½ inches, rear. Four speeds forward and a reverse sliding gear, Moores selective type, with bevel gear to floating, divided rear axles. Standard aluminum body, as shown, to seat five passengers. Weight 2500 lbs. Price $3,000, including magneto ignition, five lamps mats, horn and tools, all ready for extended touring. Cape top extra. This 110-inch wheel base chassis and body are standard. No bodies fitted to order.

The price of the 1908 special chassis, 121-inch wheel base with 36-inch tires has

The New Winton Six-Teen-Six

While Mr. Winton was abroad with his eight-cylinder racing car in 1903 his attention was first directed to six-cylinder experimental work, then under way and he was so favorably impresst with the advantages of that type that he decided when the American public were educated to the proper point he would place such a model upon the market. The 1908 Winton Six-Teen-Six is the result. The statement is made that altho the output of the factory has been as high as 1000 cars per year, only 500 of the new models will be made, the management believing that more care and individual attention and a better car can thus be built than if the factory is rushed or enlarged to increase the output

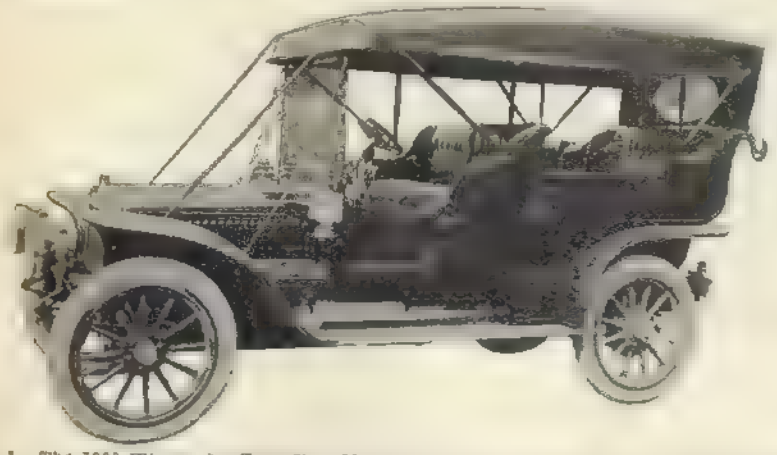

Fig. 1. The 1908 Winton Six Teen-Six. Motor six vertical dual cylinders water cooled 4½ by 5 inches stroke. All working parts fully protected from mud and dirt. Mud guards webbed to the frame and shields between the running board and body with steel pan from front to rear of change speed gear under the car. Three speeds forward and one reverse, selective type. Cardan shaft drive, floating rear axle. Wheel base, 120 inches, clearance 10½ inches, wheels 36 inches. Price, fully equipt as a touring car, $4500; as a runabout $4500; as a limousine, $5750. Equipment consists of five bow top glass front two gas head lights, two oil side lamps, one oil tail lamp, gas tank or generator, horn and set of tools

This new Winton production, as will be seen from the accompanying photo, is a large, luxuriously equipt machine which will accommodate seven passengers. Doors enclose both the front and rear seats, the tonneau doors being 19 inches wide and hinged at the rear. Two auxiliary seats with backs are arranged to fold up against the tonneau walls. The machine has a road clearance of 10½ inches, 120-inch wheel base and 56½ inch gage. Its extreme length without lamp or top is 14 feet six inches. The bonnet covering the six-cylinder engine is but 43 inches long. The car completely equipt will sell for $4500, either as a runabout or touring car, and $5750 if fitted with a Limousine body.

THE SIX-TEEN-SIX MOTOR.

The six-cylinder motor is composed of three units of two cylinders each cast in pairs with integral water jackets. The bore is 4½ and the stroke 5 inches. The cylinders and cam shaft are offset. All valves are mechanical and the springs and plungers are enclosed in pockets covered by easily detachable steel plates, as shown in Fig. 2, of the right side of the motor. The aluminum crank case has large hand hole inspection openings and is split into right and left halves which makes it possible to easily remove the crank shaft cam-rods and pistons without disturbing the cylinders or connections. This is a decided step toward the very desirable quality accessability. The main bearings are clamped to the stationary side of the crank case and are therefore not disturbed. The inlet and exhaust manifolds are held in position by yokes detachable by a single nut each. All the working parts are completely enclosed in dust and oil tight housings. The fan is gear driven, but with a friction clutch connection interposed between it and the last gear to allow for sudden starting of the engine. All these gears as well as those used to drive the magneto are enclosed. This Eisemann high-tension magneto is mounted on an integral crank case bracket on the right of the motor and driven by a shaft with flexible connection from the gear combination at the forward end. These gears are of hardened steel meshing, either with brass or white fibre according to the duty required of them. An auxiliary ignition system is supplied consisting of single non-vibrating coil and an accumulator. The magneto carries its own distributor.

LUBRICATION

The positive lubrication of all the motor parts is ensured by the use of a gear-driven Hancock oiler, with twelve adjustable leads and dash sight feeds. A separate oil pump forces oil from the crank case thru a filter

to the oiler, thus allowing the oil to be used until its lubricating qualities become impaired and at the same time supplying nothing but clean oil to the parts. This system ensures minimum oil expense

matically opened later. This system, it is claimed, gives good fuel economy and especially improves the motor action at very low speeds. This carburetor is mounted on the left of the motor and a Y branch pipe

Fig. 8. Right side of 6-cylinder 1908 Winton. Cylinders cast in pairs with integral water jackets. Bore, 4¼ inches; stroke 5 inches. All working parts inclosed and fitted with easily removable cover plates, as shown. Crank case of aluminum, split into right and left halves, making it possible to remove the connecting rods, pistons or crank shaft without disturbing the cylinders or connections. The crank shaft bearings are carried by the stationary side of the case

A centrifugal gear-driven pump forces the cooling water thru the engine jackets to the extra large radiator of finned seamless copper tubes. The circulation is peculiar in that it enters the cylinder heads at the exhaust side and passes out again of the head on the opposite side

connects it to two U pipes on the other side of the motor. These pipes lead to centrally located chambers between the dual cylinders, their inner ends uniting and entering the chamber of the middle set of cylinders. A 22 gallon tank with gage is carried at the rear of the frame and carries a 3 gallon reserve

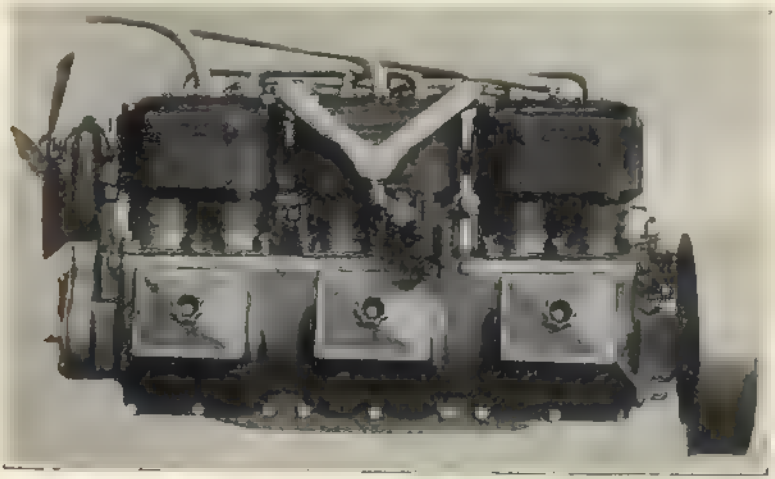

Fig. 9. Left side of Winton Six-Teen-Six motor, showing the crank case hand hole plates, the new multiple jet Winton carburetor and the gear driven fan, all gears being inclosed. Dual ignition, storage battery and non-vibrating coil forming the auxiliary system and an Eisemann high-tension magneto with included distributor the other. A gear-driven Hancock oiler supplies forced lubrication

A new Winton type of multiple jet carburetor is used. This is provided with two sets of nozzles and throttle openings which operates progressively, the smaller coming into action first and the larger being auto-

within it. A patented auxiliary tank on the dash allows gravity feed to the carburetor.

BALL-BEARING CLUTCH.

A sixty-five disk clutch, mounted on ball-

bearings and running in oil, flexibly but powerfully connects the engine to the change gear. The discs are forcibly engaged by a ring of six springs which distribute the pressure equally over their surface, giving much more uniform distribution than when only one central spring is used. The clutch is accessible for adjusting and is operated by a foot pedal independent of the brakes. A three speed and reverse selective type change speed gear is used, giving direct drive on the high, with a gear reduction of 2.64 to 1. The change gears are mounted on ball-bearings and an enclosed interlocking mechanism is provided.

The drive is by a cardan shaft practically horizontal and fitted with roller type universal couplings. An improved flexible coupling is also used between the engine and change speed gear. The entire driving mechanism is housed and securely protected from mud and dirt, no mud exposed chains or chains of any kind in fact, being found in the well-protected mechanism of the Winton. A steel dust pan extends from the forward end of the motor to the rear of the change speed gear case and an apron extends from the radiator to the pan, thus the entire under side of the car is thoroly protected. The mud guards are of prest steel of original design, webbed to the frame so as to completely protect the body from road wheel splash. The space between the running board and the frame is also fitted with a shield extending from the pan to the rear guard.

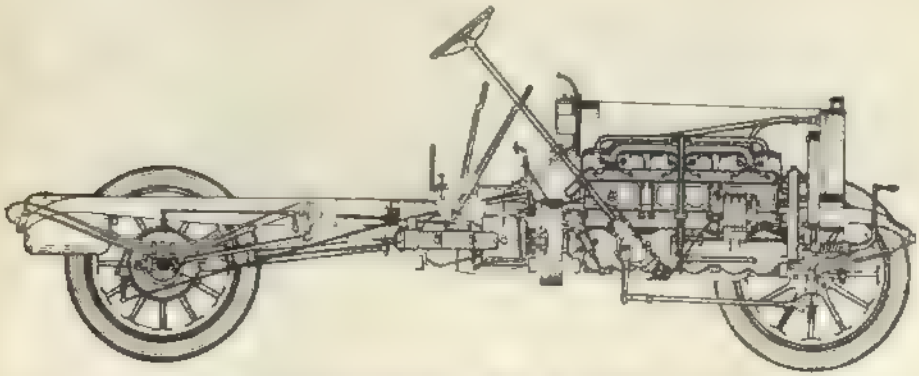

Fig 4. Chassis of the Winton Six-Teen-Six. Motor six cylinders 4 x [illegible]. Prest steel frame of channel section, with sills and cross members of channel section and frame. Multiple patented twin springs, three-speed and reverse selective type [illegible] gear. Double set of equalizing brakes on rear wheels. Mechanism enclosed and all gears run in oil. No belts or chains are used anywhere in the transmission [illegible] fan being employed. Wheels, 36 inches, wheel base 126 inches. Multiple ball bearing cutout. Gasoline tank at rear with auxiliary gravity feed tank on the dash.

AXLES AND SPRINGS.

The rear axle is of the floating type, carries no load and is stayed by ball jointed torsion and radius rods of improved design. The axle shaft, differential gear and pinion shaft can be removed with the car standing on its own wheels, not even a jack being necessary. Timken roller bearings are used. The front axle is a one-piece I beam section Parsons manganese bronze casting The well-known patented Winton [illegible] springs are retained by a single clip which passes thru the center of the axle bed. The front end of the front and the rear end of the rear springs are banded to protect them against breakage by rebound. The front springs have 9 leaves and are 1¾ by 39¼ inches. The rear springs are 2 inches wide, have 11 leaves and are 52 inches long. Both are of the usual semi-eliptic form

The frame is of prest steel, the sills or side members and the drop cross members being made of one piece, channel section The intersections are strongly reinforced by gusset plates. The drop part of the frame carries the motor, clutch and change speed gear. The dash is of mahogany with a steel hood and carries nothing but the small auxiliary gasoline tank and the coil. The engine bonnet is of aluminum held by spring plungers.

STEERING AND CONTROL.

The steering gear is of the screw and nut type with ball thrust bearings and the connecting linkage joints are fitted with heavy bushed bolts, no taper pins being used in the construction. These bolts are locked by cotter pins.

The steering knuckles are mounted on roller bearings. The usual spark and throttle levers are on top of the steering wheel but are friction retained in any position by the use of taper plugs spring prest into a V groove in the stationary sector. The outside hand lever controls the internal expanding brake and also releases the clutch. The inside hand lever controls the change speed gear. Two push pedals and an accelerator button are provided, the left pedal operating the clutch and the other the external brakes and is independent of the clutch Both brake levers and brake pedals can be locked in any position. The brakes are operated thru equalizers and will hold equally well in either direction.

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Orders received by the Morning Mail are shipped by the Noon Express daily. This is only possible by having a large stock of machines on hand to draw from.

Our last season's experience in Motor Cycle Deliveries taught us, that to meet the heavy demand for machines during the Riding season, the Manufacturer must crowd his plant to its fullest capacity, not only during the busy months, but during the long Winter months, when there is little or no riding.

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The term Immediate Delivery has become so common that all Manufacturers use it, even though they are actually six to eight weeks behind in deliveries. If you expect your customers to enjoy their Motor Cycle this season, better place your orders where you are positive of

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The best Motor Cycle in the world in stock all crated, ready to stencil your address on.

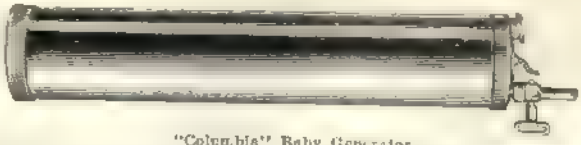
AMERICAN MOTOR COMPANY

715 Centre Street

BROCKTON, MASSACHUSETTS

"Columbia" Motorcycle Headlight and Generator

The cuts herewith illustrate two attractive accessories for the motorcycle, the "Columbia" motorcycle headlight and the "Columbia" Baby Generator. The headlight has a 5-inch opening and a 4¼-inch reflector. It weighs only half pound and can be attacht to any machine on the market. The Baby Generator measures 11 inches long and 2 inches in diameter. It is made on the same principle as the Columbia generator for automobile use. A bracket is fitted to make it applicable to any motorcycle. These two accessories are made by Hine-Watt Mfg. Co., 58-60 Wabash avenue, Chicago.



"Columbia" Baby Generator.

"Columbia" Motorcycle Headlight

The Curtiss 8-Cylinder Motor

One of the most powerful motors ever hooked up to a 2-wheeled vehicle is the Curtiss 8-cylinder motor here illustrated. This motor is the same as the one used on the Curtiss motor cycle, which made such a remarkable performance at the Daytona-Ormond meet. It is especially suited for motor cycle and airship use.

The Curtiss 8-Cylinder Cycle Motor

This engine weighs 150 lbs. and develops 30 H. P. at 1500 revolutions per minute. The cylinders are set at an angle of 30 degrees and are 3¼×3¼.

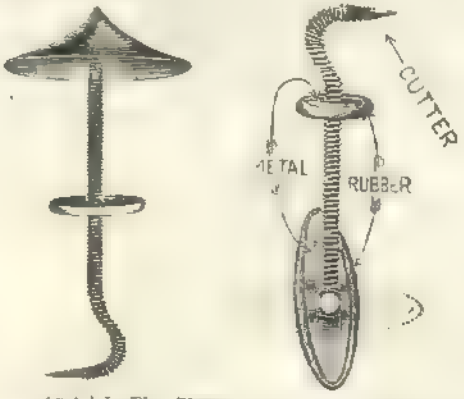
The intake valves are automatic. The crank shafts are made of crome nickel steel and are hollow 1¼ inch in diameter. All shaft bearings are ground and run in a special bearing metal.

The cylinders, pistons and rings are cast from a special air furnace iron and are all ground to size. Ignition is by a jump spark, a single coil and distributor being used. Two special Curtiss carburetors are used. The price of the engine complete with all accessories including a light sprung up balance wheel with valves for cooling cylinders, starting crank etc., is $1000.

Apstein's Tire Plugs

In the accompanying cuts are shown two styles of tire plugs, manufactured by David Apstein, Bridgeport, Conn., designed specially for bicycle and motor cycle tires.

Apstein's plugs are made in two styles, viz one made of rubber only, and the other of metal reinforced with rubber. The plugs are used the same as an ordinary rubber plug, by enlarging the puncture to suit the insertion, then cleaning the tire around the puncture and plug with benzine or gasoline to allow the cement to stick. A little cement is placed on the face of the plug, which is then inserted in the puncture and same secured in place by tightening the nut. The stem is then cut off with pliers and the tire inflated. The rubber reinforced metal plug, lists at 10 cents each.



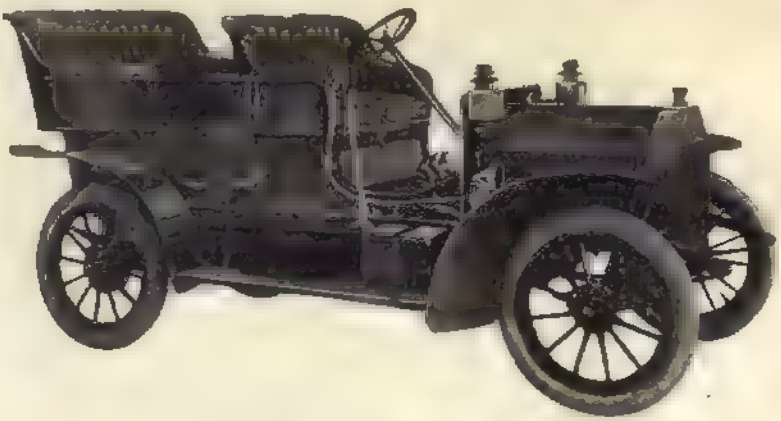
Apstein's Tire Plugs, the one on the left is made of rubber and the one on the right of metal reinforced with rubber

Asa Dawson, of Reno, Nev., on April 24, commenced business with six new motorcycle delivery vans.

Mayo Damper Co, Pottstown, Pa, makers of the Mayo Motor Cycle, are now prepared to furnish the machine fitted with a magneto for ignition instead of a battery, and the demonstrating machine which they have thoroly tested has shown much improvement in power and speed, they say.

The "AUBURN"

The Most for the Money



OUR MODEL G

5-Passenger Touring Car. $1350.00

SPECIFICATIONS:

Motor—Two-cylinder double opposed 5¼ x5. 24 H. P., all parts accessible. Planetary transmission. Schebler carburetor. Splitdorf coil. Mechanical oiler with sight test. Steering device latest improved nut and screw type with 16 inch wheel. Control levers on top of steering wheel. Radiation 143 feet. Pressed Steel Frame. Full elliptic springs in rear, half elliptic in front. Wheel base 100 inches. Tires 32x3½.

Built for Power, Speed, and Easy Riding.

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Built to meet the popular demand for an all purpose car at a popular price—one that has sufficient power and proper construction to carry a load over all kinds of roads in all kinds of weather with the least expense and least trouble.

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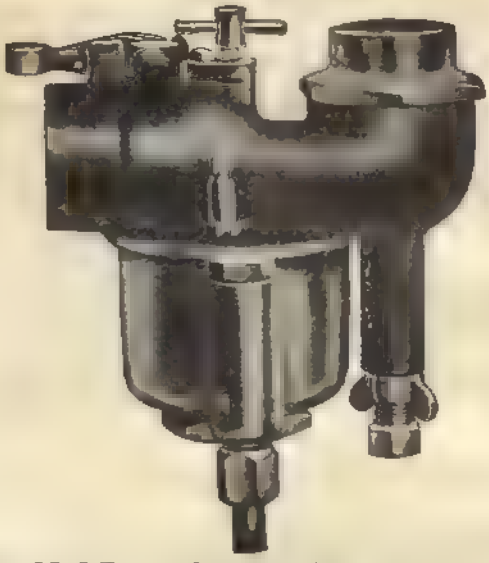

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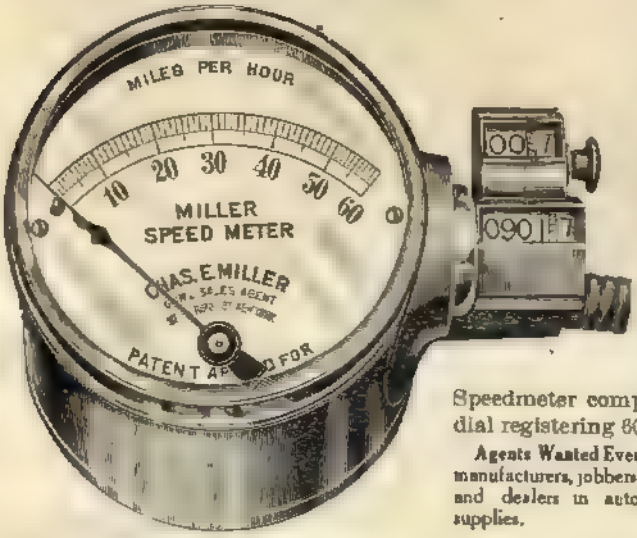
THE MILLER SPEEDMETER



The Miller Speedmeter is the simplest and most compact, durable and accurate speedmeter on the market. It works on the principle of centrifugal force. It is arranged for adjusting the tension of springs at all speeds and with this specially constructed governor and spring adjustment the springs are made and adjusted to show all speeds with absolute accuracy.

The price of the Miller Speedmeter complete including odometer with dial registering 60 miles per hour, $60.00.

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The Miller Automobile Jack is a quick acting, automatic lowering jack, designed especially for automobile use and is adapted to the factory or garage, as well as to be carried as a part of the equipment on motor cars.

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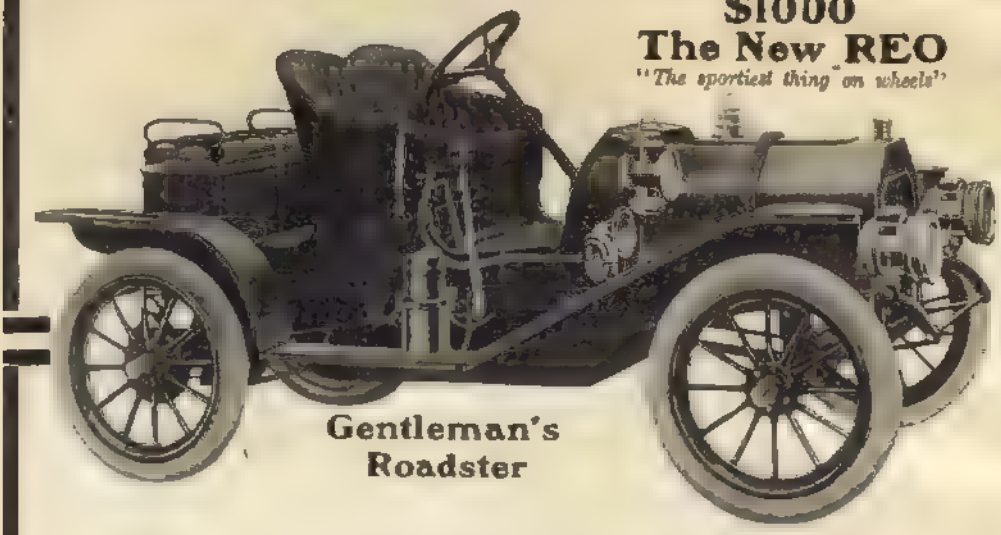


Gentleman's Roadster

REO

Three models for 1908

Every one with the same positive, powerful REO engine-design and strong, clean-cut, practical construction, that has made the REO in its first three years take more prizes and give more *sur*prises than any other motor-car ever built.

Write for book that tells the whole story.

The new REO Gentleman's Roadster shown above is the 1908 sensation of the roadster class. It has the touring car chassis with a special-design body. Is higher geared, lighter, and sets low; with rakish seats, a trunk-box in the rear—convertible into a 2 passenger seat, flaring, protecting fenders, and 32-inch wheels. And it actually makes 45 miles an hour. More "go" than was ever before sold for the price. **$1000** f. o. b. Lansing.

KINGSTON SPARK COILS FOR Quality and Quantity

The phenomenal success of the Kingston Coil has induced many of the oldest coil makers in this country and Europe to try to copy Kingston quality and quantity. Watch them.

Kingston Switch
Price $1.00

Prices of Kingston Jump-Spark Coils.

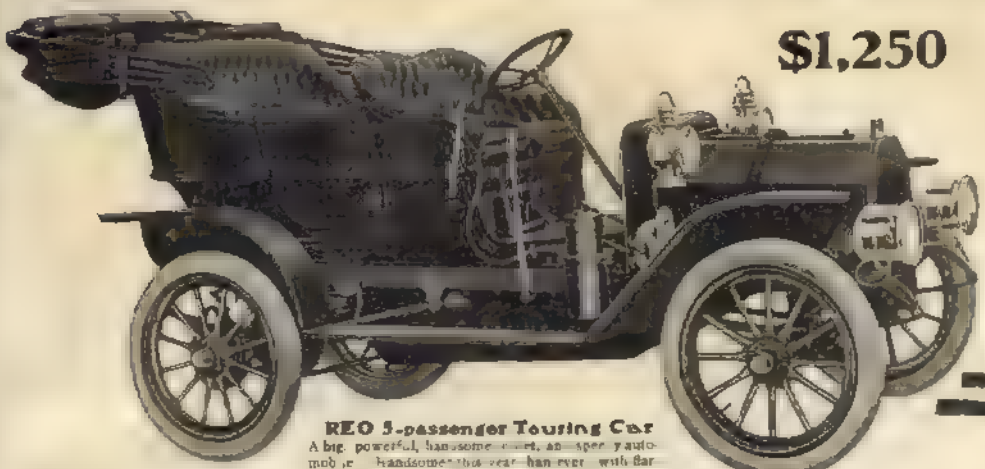
Single cylinder plain box vibrator coil	$ 7.[illegible]
Double " " " " "	15.00
Triple " " " " "	22.50
Quadruple " " " " "	30.00
Single dash vibrator coil with switch	12.50
Double " " " " "	22.50
Triple " " " " "	32.[illegible]
Quadruple " " " " "	42.50
Sextette " " " " "	62.50
Units for dash coils	9.00
Motor cycle standard coil	9.00

Special Discounts to Manufacturers and Dealers.

Send for Descriptive Booklet. For Sale by all Jobbers.

Kokomo Electric Co., Kokomo, Ind.

Canadian Trade Supplied by
JOHN MILLEN & SON, Montreal and Toronto



$1,250

REO 5-passenger Touring Car

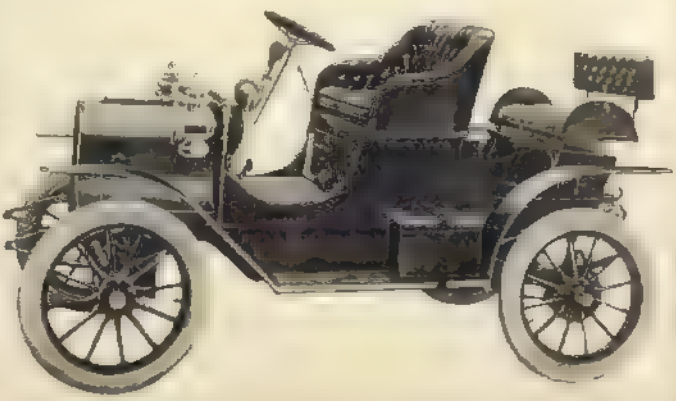
A big, powerful, handsome, quiet, and speedy automobile—handsomer this year than ever, with flaring metal fenders and protecting sides. New type mufflers make it the car absolutely quiet. Muffler cut-out. Spark and throttle on the steering wheel in addition to foot control. Improved and perfect rumble. 32-inch wheels, 3½ inch tires and other minor improvements. **$1250** f. o. b. Lansing. Top $60 extra.

1908

It was a REO in the latest Glidden Tour that beat 48 cars of double and triple its price including 24 that cost $4000 and upward. Every beaten car cost more than the REO. A REO was the only car at its price, and with one exception the only car at less than double its price that finished with a perfect score.

REO Runabout.

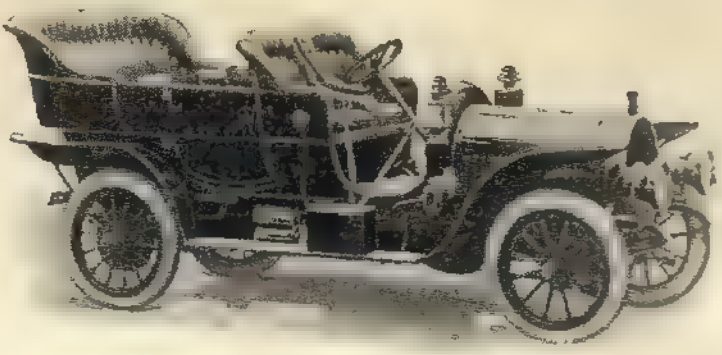
Mechanically the same mechanical construction as last year's popular car made. But with better equipment and fitted with the same design hood, fenders and connecting running board as the touring car including folding seat. **$650** f. o. b. Lansing



R. M. Owen & Co.
Lansing, Mich

General Sales Agents for the REO Motor Car Co.

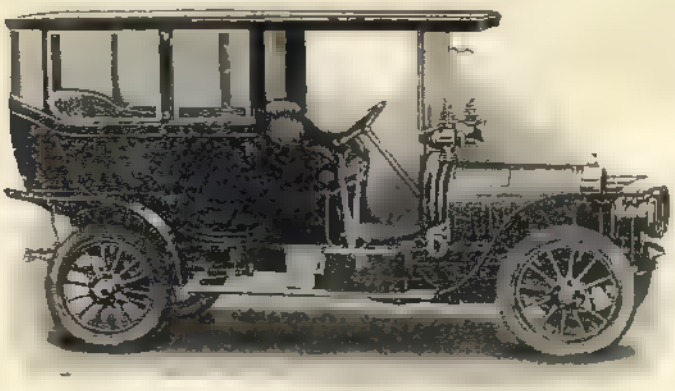
ROYAL TOURIST



1907 MODEL G—SERIES 2

Touring Car, $4,000 **Limousine, $5,000**

Both Seven Passenger and Forty-five Horse-power.



Royal Double Ignition System—Royal Carburetor—Royal Fenders—Royal Advanced Improvements.

Our second edition catalogues contain reproductions of photos of all cars and parts with blue prints of every Royal detail. Send for it and learn what is essential to a perfect car.

THE ROYAL MOTOR CAR CO.

CLEVELAND, O.

Member A. L. A. M.

We have some territory still open for reliable agents.

Mr. Dealer:

Are you "IN RIGHT" for

1908?

Are you handling the right line of cars?

Are you handling a line that worries you half to death to keep the cars going and to keep the owner satisfied?

Do you feel like you wanted to find a hiding place every time you see a user of one of your cars coming?

Are you handling a line that makes every buyer a "booster" for you, or are you handling a line that makes every buyer a "knocker"?

Does every car you sell help sell another, or does every car you sell prove a boomerang?

Do you have to cut prices because your cars wont sell at list?

Are you handling a line that people want, or do you have to work to sell them something they don't want?

Does the manufacturer properly protect you in your territory?

In other words, are you entirely satisfied?

If you're not, now is the time to commence figuring on what you are going to do for 1908.

The

line is the strongest proposition in the automobile business to-day, and next year it will be stronger than ever.

We are stocking up on material and preparing for 1908 now, so that deliveries will be made promptly throughout the season. That's an important item.

We will be prepared to handle some new territory that we haven't been able to touch before because of lack of cars.

A few "dead ones" among our dealers may be weeded out, because our output next year will be greater than ever, and we want only "live ones."

If you are open to consider the line that almost sells itself write us. Tell us who you are, what you are now handling, how much business you have done, and what you think you can do with the Cadillac.

CADILLAC MOTOR CAR COMPANY

DETROIT, MICH.

Members of Ass'n Licensed Auto. Mfrs.

¶ We make certain claims regarding the superiority of **"THE SCIENTIFIC CARBURETOR."**

¶ But:

¶ Claims are one thing; Proof is another.

¶ Now:

¶ 12 of the first 15 carburetors made by us were sent to prominent persons who were simply owners of cars.

¶ Those persons, as almost every body else does, stabled their cars at some prominent garage.

¶ We have just finished delivering 100 of the 108 carburetors for which orders were received within two weeks after sending out the first 12.

¶ Remember: these sales were not made thru an inclination on the part of car owners to satisfy their curiosity raised by the reading of some advertisement.

¶ But:

¶ These sales were made because **"THE SCIENTIFIC CARBURETOR"** showed its own superiority when placed in actual operation.

¶ We think this is proof.

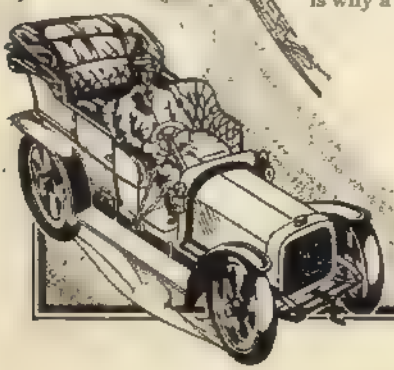
¶ The E. W. Stevens Co., East New Market, Md.

HAYNES

1893 to 1907

A Long Start

A long start was achieved toward the goal of automobile perfection when the Haynes factory—the first automobile factory in America—was built in 1893, ten years before the beginning of the average car now on the market. ¶ There is ten years more of automobile-building experience in a Haynes. The Haynes makers were first to note the major problems and to solve them. Then they pressed on to the minor difficulties—the problems of wear; of little wastes of power, oiling, control—and solved them. Most of the rest of automobiledom copied slavishly building crude mechanisms while the Haynes—years ahead—was developing innermost refinements and little perfections. ¶ Make-and-break ignition, nickel steel, aluminum alloy for bodies and engine parts, large wheels, the side entrance tonneau are a few of the Haynes devices. The sprocket and-roller pinion direct drive (avoiding rear axle strains or noisy side chains), the positive cooling system, the improved universal joint, the metal-faced master clutch (no leather to renew), the roller bearing power route, and the Haynes transmission that allows change of gears by one lever without releasing the clutch or clashing the cogs—these are some of the advanced devices of 1907 that show how the long start has landed the Haynes still far in the lead of the race toward "the perfect automobile." ¶ No car of any price can challenge the mechanical leadership of the Haynes. ¶ The net result of mechanical excellence of design and workmanship is *durability*. ¶ That is why a Haynes 1907-8 model is a genuine *investment*.



ADDRESS DESK G 19

Haynes Automobile Co.

KOKOMO, IND.

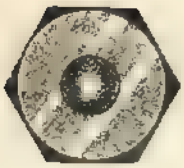
Oldest Automobile Manufacturers in America

NEW YORK
1715 Broadway

CHICAGO
1420 Michigan Ave.

Members A. L. A. M.

GO WITH AND



With a GENUINE COES wrench you can tighten or loosen the most stubborn nut with comparative ease.

There is a style and size for every wrench purpose.

A GENUINE COES will not chew the corners off a nut, making it necessary to resort to hammer and chisel, but will take a clean hold, and turn it without marring.

The man who has "bumped" a stiff wrench problem, with a "near-Coes," in his sturdy right, is the man who will appreciate the real COES.

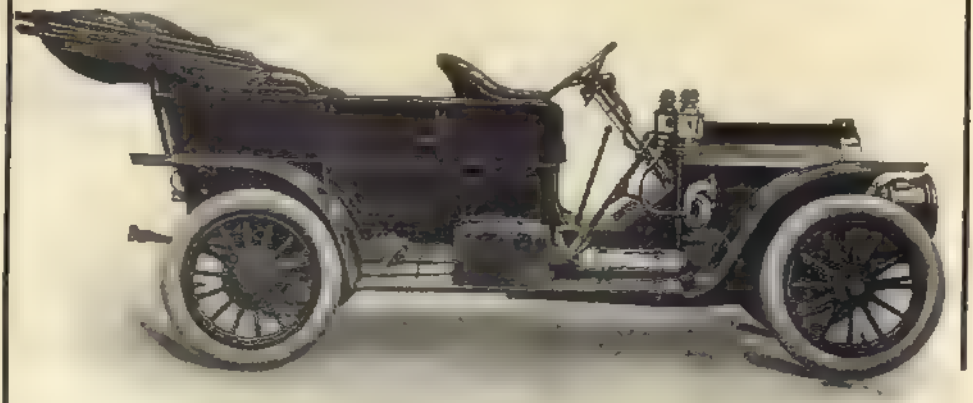
The man who has not "bumped" yet, will side-step a lot of trouble by buying the wrench with the star ★ trade mark, NOW.

COES WRENCH COMPANY

AGENTS—J. C. McCarty & Co., 10 Warren Street, New York.

A True Motor Car Story

The BEST motor car at a PRICE WITHIN REASON. This is Stoddard-Dayton policy of manufacture. Performance has always followed promise.



Stoddard-Dayton

An Output of 125 Cars in 1905 to 1200 Cars in 1907.

These are figures which prove the increasing faith of the motoring public in Stoddard-Dayton works—faith never misplaced.

Model S-F Touring Car, roomy and powerful. Provision is made for two folding seats in tonneau at extra cost, which converts this into a seven-passenger car.

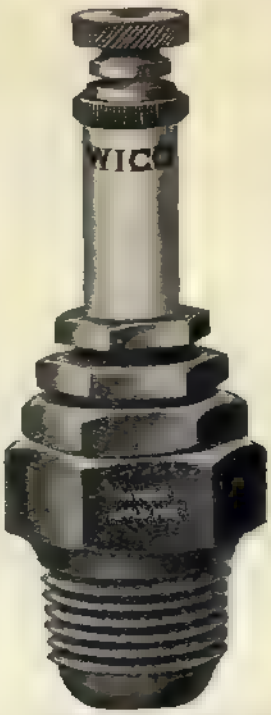
Stoddard-Dayton Model 8-F, 30-35 H. P. Motor, four vertical cylinders, cast in pairs, 4¾ x 5 inches. Selective type transmission, three speeds forward and reverse. Enclosed fenders. Price, $2,500 f. o. b. Dayton, with oil lamps, horn and tool equipment.

Send for 1908 Catalog.

The Dayton Motor Car Co.

DAYTON, OHIO

AT LAST A PERFECT SPARK PLUG



THE WICO

eliminates all guesswork. Reduces ignition troubles to a minimum.

Positively the highest development in this important item of motor car equipment.

The exclusive MICROMETER FEATURE of the Wico Spark Plug permits instant and accurate adjustment of the spark gap to any required distance down to **1-1000 of an inch.** All plugs may be set alike assuring rhythmic running of the engine.

THE WICO SPARK PLUG can be taken apart and cleaned without disturbing the packing The porcelain is of the highest grade—will not break or crack under the most intense heat. Adjustment to suit ANY condition of impression or ignition.

EACH WICO SPARK PLUG IS GUARANTEED FOR ONE YEAR

Having successfully withstood the severest tests, the Wico Spark Plug is now adopted and endorsed by leading manufacturers. The Thousands in daily use are giving unqualified satisfaction and bearing out the truth of every claim yet made for them.

GIVE THE WICO A TRIAL: **Send us $1.00 for one sample Wico Plug or $5.00 for five Plugs packed in solid oak case.**

Obtainable from dealers and agents everywhere.

Made in standard or special sizes to fit any car. Write to department 23 for catalogue also Witherbee Battery Literature.

We exhibit at Madison Square Garden November 2d to 9th.

Manufactured by

Witherbee IGNITER COMPANY

THREE FACTORIES

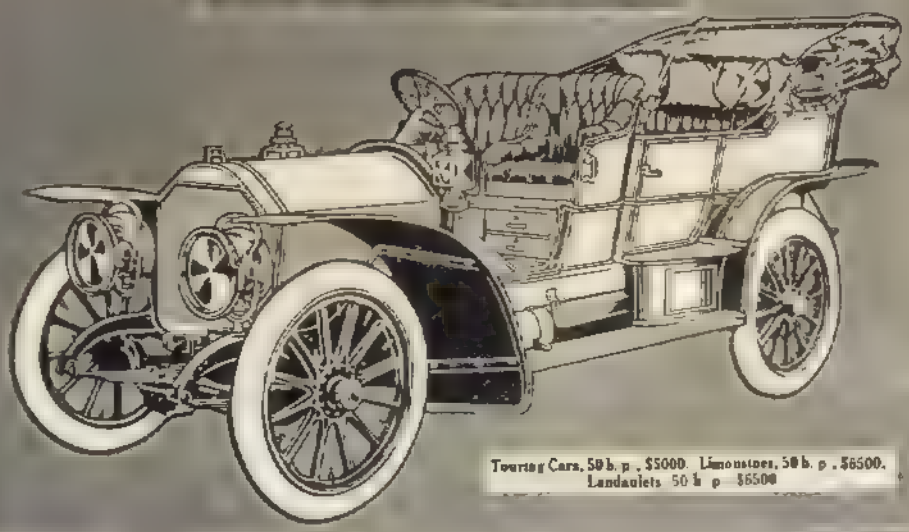
NEW YORK	CHICAGO	DETROIT
541 West 43rd St.	1429 Michigan Ave.	220 Jefferson Ave.

BALTIMORE OFFICE—510 Continental Trust Building

LICENSED UNDER SELDEN PATENT

Matheson

GUARANTEED ONE YEAR



Touring Cars, 50 h. p., $5000. Limousines, 50 h. p., $6500. Landaulets, 50 h. p., $6500

The Matheson is standardized. The few changes for 1908 are unimportant refinements. As a matter of fact, most of these were incorporated in mid-season, in our '07 cars. This is the Matheson policy. We do not "save up" new features till the beginning of a new selling season. We neither expect nor desire Matheson owners to buy a new car every year, nor every other year.

We are building today 1908, 1909, 1910, 1912 Mathesons and he who invests will have, years hence, a car which will, after the hardest use, be running as strongly, as reliably, giving as efficient and as economical road service as any high class car then offered for sale. A 1906 Matheson stock touring car still holds the world's record for having carried seven passengers a mile in 50 1-5 seconds. Most cars are bought; Matheson cars are invested in.

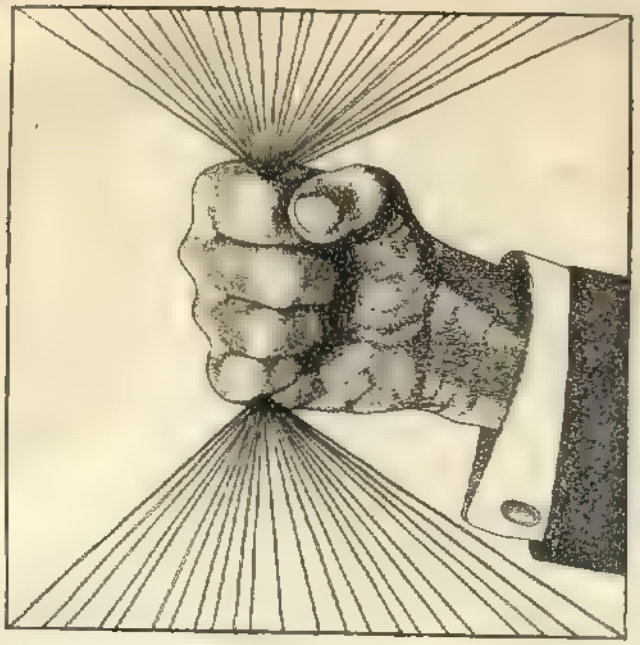
The salient Matheson features are those of the greatest foreign cars. The Matheson differs from these in one important respect, it sells [illegible] its new speed records, but Lansing records cover not records, its perfect seven [illegible] tests made not one without need of repair, but with every adjustment [illegible] proven to us that there is no room for improvement in the Matheson. We have sought in vain for [illegible] performance that would direct the improvement in any feature. Feature for feature through the world's output of high powered cars, not excepting the best of foreign makes, there is nothing that can compare with the Matheson for performance over American roads.

Write for our new booklet, "I Drove My Matheson," by Matheson owners, some of whom have made thousands of miles without even an adjustment, some of whom have gone through an entire season with a repair bill of nearly five cents. Better still, visit our exhibit, Space No 25, in the gallery at the Madison Square Garden Show. The Matheson sets a standard by which you may judge other high powered cars

PALMER & SINGER MFG. CO.

Formerly Matheson Co. of New York

1619 Broadway, New York



THEORY OF MANGIN MIRROR

¶ The primary purpose of searchlights is to concentrate light. To concentrate light it is necessary to change the direction of the rays of light. This change of direction may be accomplished in three ways:
1 By reflection (ordinary mirror).
2 By refraction (ordinary lens).
3 By reflection and refraction (Mangin Lens Mirror).

JUST imagine the light rays as so many threads of silk that are projecting themselves out into space at various angles, groundward and heavenward. Now, imagine that you should with your hand gather all these threads of silk up into a single strand and you have the layman's explanation of what happens, in a scientific way, with the rays of light which are condensed by the reflection and refraction of the

Bausch & Lomb Searchlight Mirror

¶ In other words, all the tiny rays of light which are wasted and reflected in all directions are gathered together in a solid beam and concentrated within the area which it is required to illuminate—the roadway.

¶ There is no lost energy. The tiny ray of light that in itself would have been of no value is joined with thousands of others, which united form a powerful beam.

¶ Exhaustive tests prove that with a stated candle power, a lamp fitted with the Bausch & Lomb Mangin Lens Mirror will give more than 50 per cent. greater illumination than inferior substitutes.

¶ Every mirror has B. & L. stamped on the face.

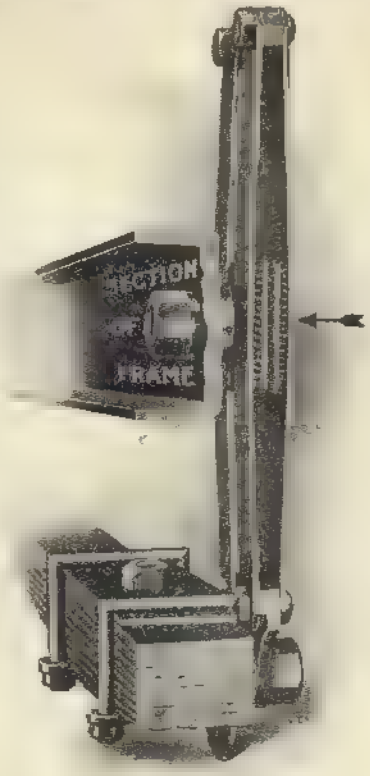
¶ "PRISM" IS A LITTLE MAGAZINE we publish monthly. Not a mere advertisement, but a beautifully made and printed little publication about that world of wonder and beauty seen by the lens. Send us your name and we will enter your subscription FREE.

Bausch & Lomb Optical Company, Rochester, N. Y.
New York Boston Washington Chicago San Francisco

The GABRIEL

SHOCK ABSORBER

The Gabriel Shock Absorber is the simplest and best, and works at just the right time. Does not destroy the resiliency of the springs when in normal position as shown here, the spring plates being fastened at each end only, thereby causing the center to be practically a free point.

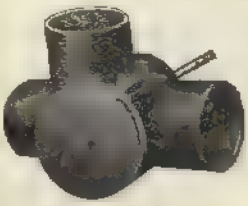


Friction gradually increases as springs contract or expand, eliminating jolts and jars when passing over obstructions on rough roads.

Made of finest special Steel with Best Camel Hair belting friction pad, can't wear out. Write for prices.

The Gabriel Horn is the only successful exhaust horn. Over 14000 sold last year. Its clear, mellow, far reaching tone warns without frightening. Operated by foot-lever and is a sure signal as long as the engine is running.

Ask for Gabriel Horn and Shock Absorbers on your 1908 car.



Cut-off Valve.

The Gabriel Horn Mfg. Co.

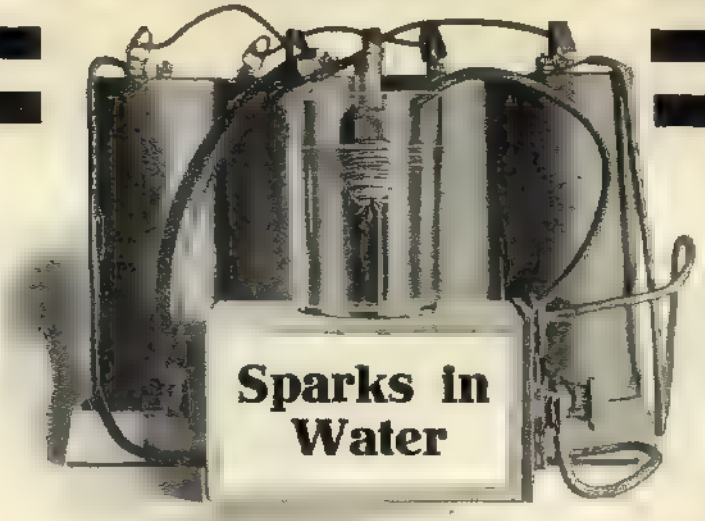
1412-40th St., N. E.,
CLEVELAND, O.

Cut-off Valve.

Reliance

SPARK PLUGS

Patented in France and Belgium. U. S. and other Foreign Patents Pending



CONCLUSIVELY PROVING

INFALLIBILITY

If Water Won't Short-Circuit A Plug nothing else will, for water is conceded to be unparalleled as fouling matter.

Construction.—The insulated sparking point is a hair-like platinum wire entirely protected from corrosive action in the cylinder by being baked in and brought flush with the surface of the porcelain. The spark in leaving this minute point is concentrated and intensified to such a degree as to instantly destroy any deposit on or near the point by its intense heat and scouring action produced by striking the surface of the insulator.

NO QUESTION AS TO RESULTS.

LOOK FOR US AT THE NEW YORK AND CHICAGO SHOWS.

Price, $2.50 Each, Postpaid.

½ inch, Metric Autocar or Association Thread.

JEFFERY-DEWITT COMPANY, NEWARK, NEW JERSEY.

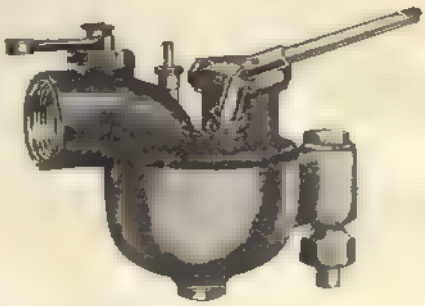
IS THAT CAR FRACTIOUS AT LOW SPEEDS?

Don't Whip It. *Don't Curse It.* *Don't Sell It*

It's Not the Fault of the Car---Only of the Carburetor

The ordinary spraying carburetor must have a certain minimum suction to make a spray. With a very low throttle, it simply fails to give the right mixture.

The Holley Model W Carburetor is so designed that at low speeds it works by intensified surface evaporation, not by spraying. Therefore it has **no minimum working speed.** It will run any motor at a walking pace in high gear. It is automatic throughout its entire range, and it responds **instantly** to changes in the throttle.



Model W Carburetor,
showing Universal Joint on gasoline needle valve, by which valve may be regulated from the seat while driving.

It has only one adjustment, which any novice can regulate, and which cannot get out of order. Catalog tells the whole story.

Put on a Holley Carburetor and Forget it!

The Holley Model W is made in a large number of special styles, attachable without machine work to cars now equipped with inflexible carburetors.

Write for full particulars to us or to the nearest agent.

(*See Opposite Page*)

HOLLEY BROTHERS COMPANY,

Detroit, Mich.

The *difference* between a Supply House and a Junk Shop

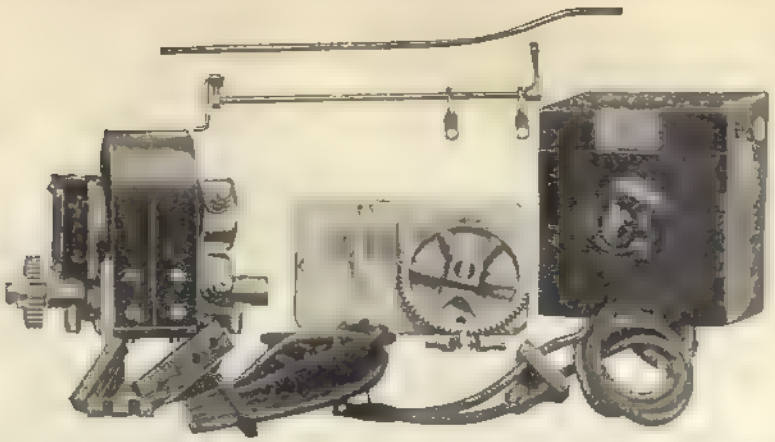
can be easily ascertained by inspection. It is for this reason we herewith reproduce a photograph of our new and thoroly up-to-date accessory store. It's the only one of its kind in the country and worth a special trip to Philadelphia to see. You probably know that a business policy which requires that everything should be done well is to the buyers' advantage.

Old shop worn stock could not live in our store where everything is clean and orderly. The same capital and energy which have created this modern automobile supply house are working every day for your interests, *because we are just as careful what we sell as how we sell it.*

Our catalog is yours for the asking and it's worth having too. Write for a copy today.

THE AUTOLIGHT & MOTOR SUPPLY CO.
INCORPORATED
506-8 N. Broad Street, PHILADELPHIA
PAUL P. RIPPIEN, General Manager

A Special Holley Magneto For the Ford Runabout



The logic of the magneto is the logic of the mechanical oiler. It is virtually a part of the motor, and supplies current as long as the motor runs. With a four cylinder motor, there is as much reason nowadays for using a delicate, uncertain battery, as there would be for using sight feed oil cups, which feed or not, regardless of what the motor is doing.

Hitherto magnetos have been so costly that their use on moderate-priced cars has been almost prohibited. We have remedied this as regards the Ford Runabout, by bringing out the well-known HOLLEY MAGNETO in a special size, attachable directly without machine work. We furnish all necessary fittings and full directions. Satisfaction guaranteed.

Price of Ford Runabout Magneto, $70

complete with coil and all attachments.

The battery now on the car is connected into the system and used as a reserve. Throwing the switch draws current from battery or magneto at will.

HOLLEY BROTHERS CO., DETROIT, MICH.

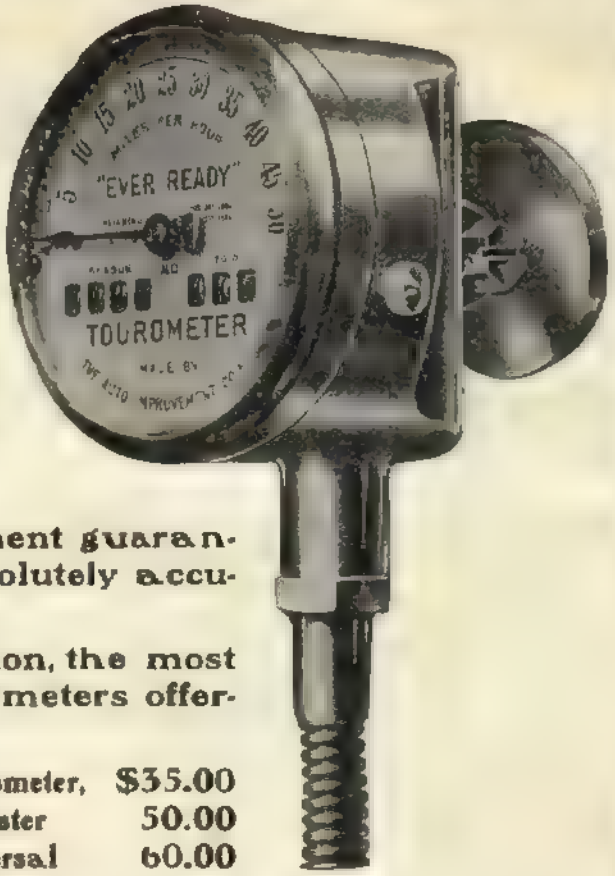
New England—Post & Lester Co., Hartford, Conn.
Pacific Coast—Geo. P. Moore Co., 721 Golden Gate Ave., San Francisco, Cal.
Geo. P. Moore Co., 1005 South Main St., Los Angeles, Cal.
Geo. P. Moore Co., 231-233 Twelfth St., Oakland, Cal.
New York—Chas. E. Miller, 97 Reade St.
Philadelphia—Chas. E. Miller, 318-320 N. Broad St.
Cleveland—Chas. E. Miller, 406 Erie St.
Buffalo—Chas. E. Miller, 824 Main St.
Chicago—Excelsior Supply Co., 233 Randolph St.
Denver—Denver Auto Goods Co.
Canada—John Forman, Montreal

"EVER READY" SPEEDOMETERS

1908 MODELS NOW READY

We are now closing contracts for next season and suggest that you investigate our liberal proposition.

They can also be had for immediate delivery.



Every instrument guaranteed to be absolutely accurate.

Without exception, the most reliable speedometers offered the public.

"Ever Ready" Tourometer,	$35.00
"Ever Ready" Roadster	50.00
"Ever Ready" Universal	60.00

DEPARTMENT 5

AUTO IMPROVEMENT CO.

Sales and Show Rooms, 2128 Broadway
Factory, 316 Hudson Street

NEW YORK CITY

On the three following pages you will find the announcement of the matchless

"Maxwell"

line for 1908---far and away the best dealers' proposition in America.

Benj. Briscoe *President*

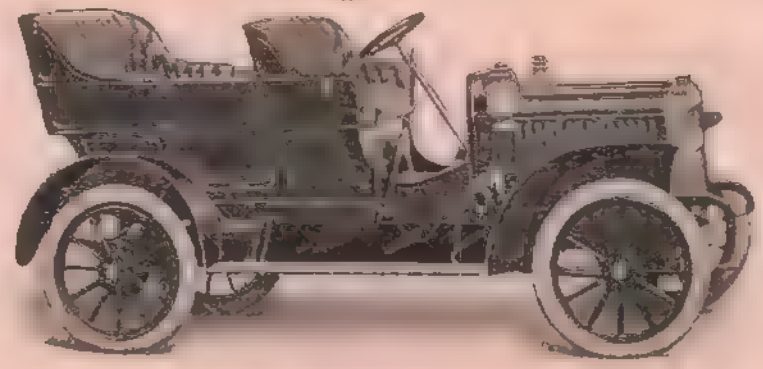
Maxwell-Briscoe Motor Company, Tarrytown, N. Y.

AT LAST!

A high-powered, four cylinder car at a low price—The New 26 H. P. 4 cylinder

"Maxwell"

AT $1750!



This splendid car is bound to be the winner for 1908. Its sales are sure to be enormous, for it supplies all the efficiency of the extravagantly-priced cars at low cost. It is an exact duplicate, as to mechanical principles, of the famous 4 cylinder "Maxwell" which won the Deming Trophy in the Glidden Tour of 1906, and served as pilot car in the 1907 Glidden Tour. Mr. J. D. Maxwell, America's foremost automobile designer, has devoted the past year to the perfecting of this model.

SPECIFICATIONS

MOTOR—4 cylinder vertical, 4¼x4¼. H. P. 26 at 800 R. P. M.

TRANSMISSION—Sliding gear, progressive type, three speeds forward and reverse.

CLUTCH—Multiple disc.

DRIVE—Shaft employing, two self-oiling universal joints.

REAR AXLE—Bevel gear. Hyatt roller bearing throughout, enclosed and oil tight.

FRONT AXLE—I beam.

WHEELS—32 inches.

TIRES—Standard Clincher type.

IGNITION—Jump Spark. Source of current dry cells.

SPARK regulation on steering column.

THROTTLE—Foot pedal.

BRAKES—Two powerful brakes of the internal and external type operating on rear drums.

SPRINGS—Semi-elliptic.

COOLING—Water; Maxwell Thermo-Syphon *without* pump.

FRAME—Pressed steel, hot riveted.

BODY—Sheet steel, moulding stamped in. Color, Maxwell green.

UPHOLSTERING—Fine quality hair and leather.

EQUIPMENT—Complete set of tools, two oil front lamps, tail light and horn.

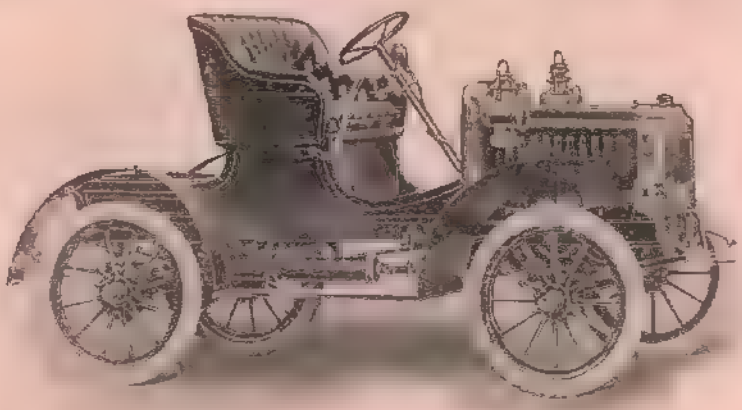
PRICE $1750 f. o. b. Factory.

(READ THE NEXT TWO PAGES

The Great 12-14 H. P.

"Maxwell"

Tourabout at $825 will lead all the medium-powered cars just as it always has done.



This famous "Maxwell" needs no introduction either to dealers or public. Anyone in any part of the country who hasn't seen this car going busily about its work has never seen an automobile at all. Thousands of these "Maxwell" Tourabouts are used to-day, and several thousand more will be snapped up by an appreciative public the coming year—not one chance in a thousand against it.

For real dollar-for-dollar value the "Maxwell" Tourabout has never been approached by any other make. It is a sure winner for sales, with a record for satisfaction *after* sales that makes every "Maxwell" Tourabout owner a "Maxwell" Press Agent.

(READ THE TWO PRECEDING PAGES)

BOSCH-

HIGH TENSION.

For Motorcars

Type "D 3 K" Jump Spark. For 1 Cylinder Motorcars with 4 cycle engines, Magneto running at camshaft-speed

Type "D 2" Jump Spark. For 2 Cylinder Motorcars with 4 cycle engines, Magneto running at engine-speed

Sold in France and England

When Ordering

kindly state horsepower (or stroke cylinders and of revolutions of your Magneto (seen from its driven end) whether you are interested in high spark or make and break mechantails you will enable us to offer you

The Magneto suiting

Type "HDh" Jump Spark **Giving 4 sparks each revolution.** For 4 Cylinder 4 cycle Motorcars Magneto running at camshaft-speed **For 4 Cylinder 2 cycle Motorcars,** Magneto running at engine-speed

Type "D 4" Jump Spark For 4 Cylinder Motorcars with 4 cycle engines, Magneto running at engine-speed.

Type "D 6" Jump Spark. For 6 Cylinder Motorcars with 4 cycle Engines. Magneto running at one and one-half of engine speed

FOR MOTORCYCLES.

Type "D A 2" Jump Spark. For 1 Cylinder Motorcycles, Magneto running at camshaft-speed.

Type "D A V" Jump Spark. For 3 Cylinder Motorcycles in V-Form, Magneto running at camshaft-speed.

Type "F N" Jump Spark without distributor. For 4 Cylinder Motor-cycles, Magneto running at engine-speed.

HAVE

United States VANDERBILT CUP RACE All cars finishing had

France GRAND PRIX RACE The First 5 cars and COUPE DU MATIN was won by

Germany HERKOMER COMPETITION was won by

Italy COPPA D'ORO The First 5 cars had TARGA FLORIO All cars finishing had

Belgium CIRCUIT DES ARDENNES All 19 cars entered had

England TOURIST TROPHY RACE was won by

Austria SEMMERING HILL CLIMB was won by

Robert Bosch, New York, Inc.

MAGNETOS

as Simms-Bosch Magnetos

Bosch Magnetos

and bore of cylinders) number of motor, direction of rotation of the quantity of magnetos needed and tension or low tension ignition (jump ism. By exactly giving these de-

best for your Motor.

LOW TENSION.

For Motorcars

Type "A R 3" Make and break. For 1 Cylinder Motorcars with 4 cycle engines, Magneto running at camshaft-speed.

Type "ARn" Make and break. For 2 Cylinder Motorcars with 4 cycle engines. Magneto running at engine-speed.

High Tension

Type 22.

High-Tension Magneto for jump spark, with balanced springs for small 1 Cylinder Stationary Gasoline Engines.

Type "SR" Make and break. **Giving 4 Sparks each revolution.** For 4 Cylinder Motorcars, with 4 cycle engines, Magneto running at camshaft-speed

Type: De Dietrich.

Type "ARh" Make and break. For 6 Cylinder 4 cycle Motorcars, Magneto running at one and one-half of engine-speed. For 4 Cylinder 4 cycle Motorcars, Magneto running at engine-speed. **Type Mercedes.**

FOR STATIONARY ENGINES.

WON

Bosch - Ignition
Bosch - Ignition
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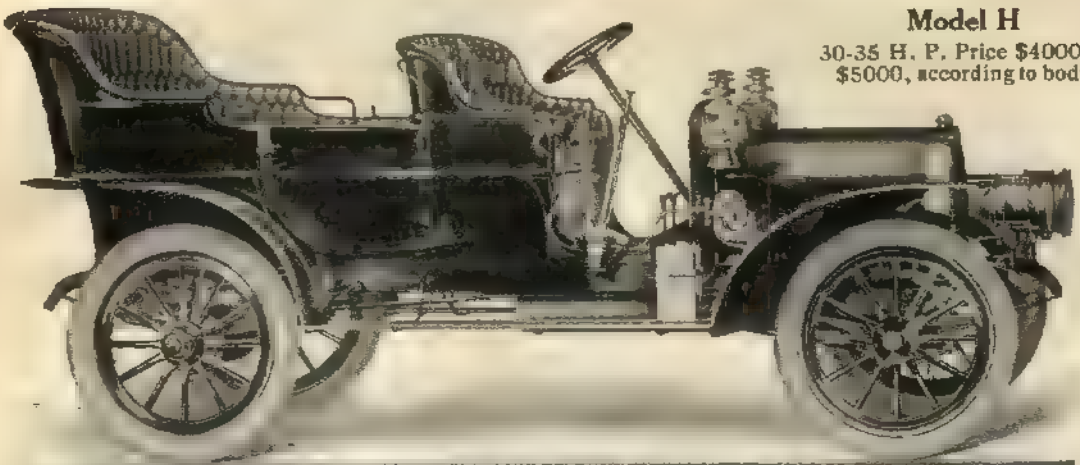
Bosch - Ignition
Bosch - Ignition
Bosch - Ignition

Type "Mn" with balanced springs make and break Magneto for 1 Cylinder Stationary Engines of 10-30 H. P.

Type "Mh" with balanced springs. Make and break Magneto for 1 Cylinder Stationary Engines of 30-120 H. P.

Type "M4" with balanced springs. Make and break Magneto for 1 Cylinder Stationary Engines of more than 120 H. P.

New York, 1947 Broadway



Model H
30-35 H. P. Price $4000 to $5000, according to body

Studebaker

"The automobile with a reputation behind it"

Simplicity, Strength, Service

MR. HARRY B. HAINES in his article in the January issue of Review of Reviews, must have had the Studebaker in mind when he wrote: "As much judgment should be displayed in selecting your manufacturer as in selecting your car."

"Hundreds of people are led away by the idea that the car that will do the most spectacular things is the car for them to buy."

"Get a simple car, the fewer parts the better."

The Studebaker reputation for quality and honesty of construction is proverbial. We have not expended our time and skill in trying to break records, but have devoted our entire attention to perfecting our cars for every-day service.

STUDEBAKER AUTOMOBILE COMPANY

MEMBERS ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS

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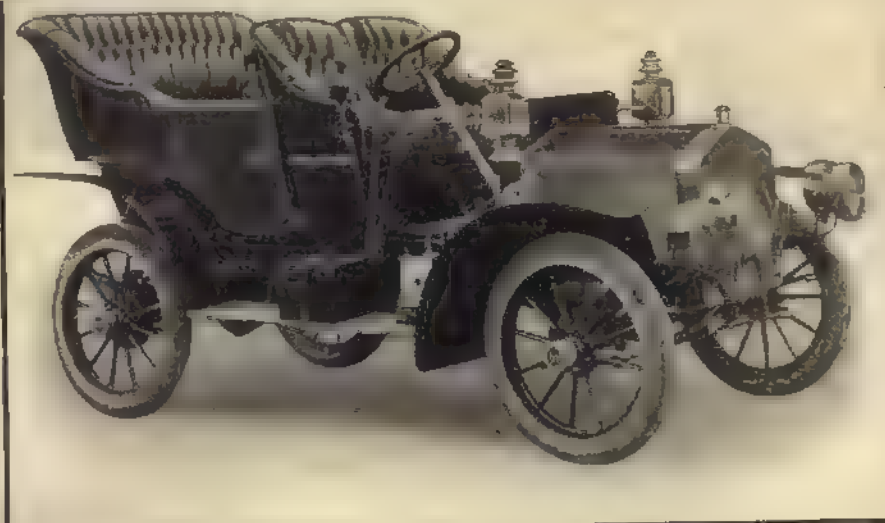
Electric Stanhope Model 22 B



Detroit Touring Car, 22-24 H. P., $1500

Detroit Agents

make money rapidly because they have a car that sells easily in competition with any car on the 1907 market listing under $2000. If you are a hustler and want a car that is all right in every detail, get our 1907 catalogue, compare our car with anything on the market at anywhere near the price, and then get our proposition to agents.

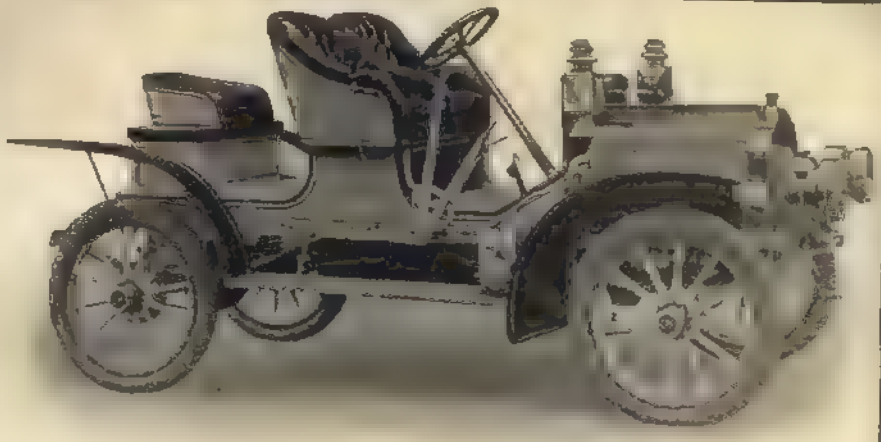
J. N. WILLYS CO.
Exclusive Selling Agents
ELMIRA, N. Y.
New York Branch
2230 Broadway

The Detroit has double opposed motor under hood, 22 24 H. P., shaft drive, three speeds forward and reverse, long wheel base, large and handsome body, 32" wheels, 3½" tires, and weighs 1900 pounds. Complete with lamp, horn and tool equipment for $1500.

MANUFACTURED BY
DETROIT AUTO VEHICLE CO.
Factories:
DETROIT, MICH.
ROMEO, MICH.

You cannot go wrong on the Detroit. We know it is the very best proposition on the market and we can prove it to your entire satisfaction if you will give us the opportunity. There are several reasons why Detroit agents

Make Money Easy



Detroit 22-24 H. P. Runabout, $1500

The Car Detroit

is all you can possibly get in any car sold under $2500, the amount of horsepower excepted. The construction and materials used in Detroit cars are the best, and the equal in every way of cars costing two and three times as much. Here are a few of the good things which help make the Detroit the best car on earth for the money. Compare them with what you get in the highest priced cars built:

Brown Lipe transmission, Standard Roller Bearing Co.'s axles, Kingston Carburetor, Barnes irreversible, adjustable steering gear, Heinze coils and commutator, American Lubricating Co.'s latest sight feed, automatic oiler, Bilgrim cut gears, etc., etc.

J. N. WILLYS CO.
Exclusive Selling Agents
ELMIRA, N. Y.
New York Branch
2230 Broadway

MANUFACTURED BY
DETROIT AUTO VEHICLE CO.
Factories:
DETROIT, MICH.
ROMEO, MICH.

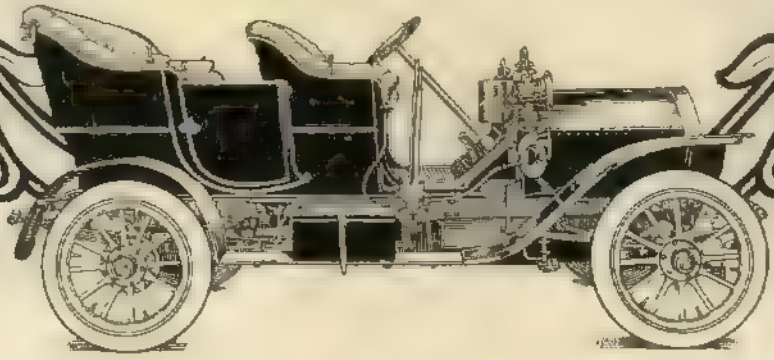
If you take the trouble to look up the class of goods produced by these makers you will find them to be the best that money can buy. That is why the Detroit

Is a Reliable Car

KNOX

COMFORT
UTILITY
ECONOMY

Three prime essentials for the thorough enjoyment of motoring, in the



Model "H"

KNOX WATERLESS

Price, $2,500

Long and extremely flexible springs and good upholstering provide the first; ample horsepower and simplicity of design the second; exceptionally light weight, low fuel consumption and large tires the third essential. It is a car for the owner—not the chauffeur. 25-30 H.P.—102-inch wheel base—32 in. x 4 in. tires; selective transmission; perfect three-point suspension.

Let us send you our 1907 Catalogue. It illustrates and describes this and four other models, and *it is free.*

KNOX AUTOMOBILE COMPANY

Members Association Licensed Automobile Manufacturers

Springfield, Mass.

WE HAVE SAID A GOOD DEAL

about the SIMPLICITY, EFFICIENCY and CONVENIENCE of the

HOLLEY 1908 MAGNETO

Now for its RELIABILITY!

ADDRESS ALL COMMUNICATIONS TO THE COMPANY

Ford Motor Company

AUTOMOBILE MANUFACTURERS.

WORKS & OFFICE.
COR. PIQUETTE & BEAUBIEN STS

ADDRESS REPLY TO
MANUFACTURING DEPARTMENT

HENRY FORD, PRESIDENT
JOHN F. DODGE, VICE PRES'T
JAMES COUZENS, SEC'Y & TREAS

Detroit, Michigan, June 24, 1907.

Holley Bros.,

Detroit, Mich.

Gentlemen:

Our Ford, six-cylinder car, which won the 24 hour race Saturday, breaking all world's records, was equipped with the Holley Magneto. During the entire race it gave no trouble of any nature and so obtained uniformly satisfactory results.

Yours truly,

FORD MOTOR COMPANY.

Henry Ford
President.

In other words, the Ford car which won the memorable 24-hour race in Detroit, on June 22, was equipped with the Holley High Tension Ignition System. During the entire race the magneto was constantly working. THE BATTERY WAS NEVER USED, and the magneto was not repaired or adjusted in any manner whatever. Several of the contesting cars carried foreign makes of magnetos.

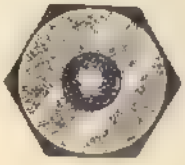
The Holley Magneto with separate Distributor and Timer affords a dual ignition system with practically none of the expense and complications of any other system. It is so much better than anything else of its kind that no owner of a four or six cylinder car can afford to be without it.

HOLLEY BROTHERS COMPANY

DETROIT, MICHIGAN

C O

WITH AND



With a GENUINE COES wrench you can tighten or loosen the most stubborn nut with comparative ease.

There is a style and size for every wrench purpose.

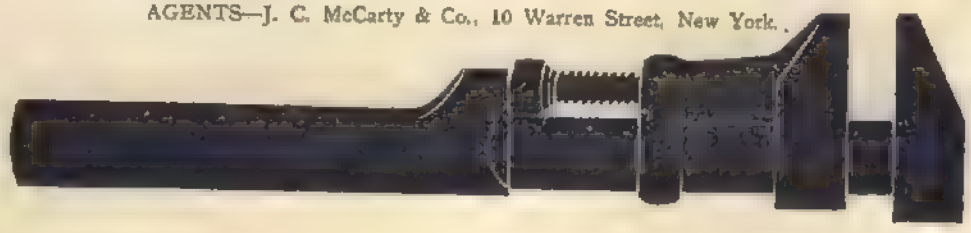
A GENUINE COES will not chew the corners off a nut, making it necessary to resort to hammer and chisel, but will take a clean hold, and turn it without marring.

The man who has "bumped" a stiff wrench problem, with a "near-Coes," in his sturdy right, is the man who will appreciate the real COES.

The man who has not "bumped" yet, will side-step a lot of trouble by buying the wrench with the star ★ trade mark, NOW.

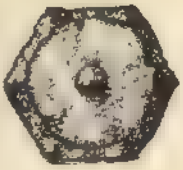
COES WRENCH COMPANY

AGENTS—J. C. McCarty & Co., 10 Warren Street, New York.



E S

WITHOUT



Without a Coes Wrench, you are "playing with fire," so to speak. You are constantly welcoming wrench troubles which you will not be able to meet.

There are many imitations, which almost "look the part" The fake gold-brick is just as bright and shiny as the real thing.

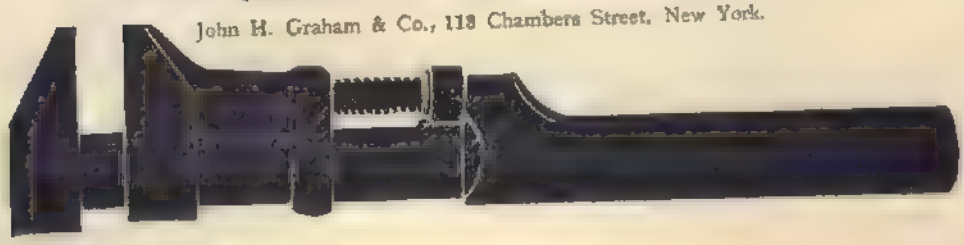
It pays in the end to buy a GENUINE COES in the beginning. The star ★ trade mark is a guide to the wrench you need It is the mark of quality.

The GENUINE COES is made of steel castings, hardened by our special process, and is 30 per cent. stronger than any imitation.

Send for the Wrench Book.

WORCESTER, MASS., U. S. A.

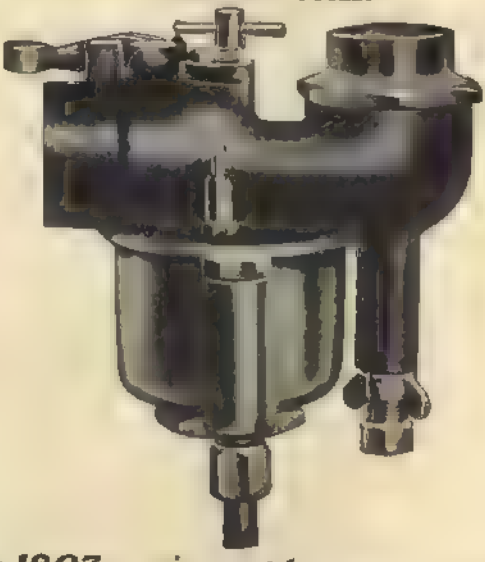
John H. Graham & Co., 118 Chambers Street, New York.



KINGSTON
1907 CARBURETORS

VERTICAL OUTLET

HORIZONTAL OUTLET



Furnished as regular 1907 equipment by

Olds Motor Works	Motorcar Co.	Austin Auto Co.
Ford Motor Co.	Detroit Auto Vehicle Co.	Logan Construction Co.
Haynes Auto Co.	Buckeye Mfg. Co.	Armac Motor Co.
Wayne Auto Co.	Rapid Motor Vehicle Co.	
E. R. Thomas Detroit Co.	Continental Motor Mfg. Co.	And many others.

Over 63,000 Kingston Carburetors Now in Use

KINGSTON MUFFLERS

Byrne, Kingston & Co., Kokomo, Ind., U. S. A.

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John Millen & Son { Toronto / Montreal

For Sale by all Leading Jobbers. Get Catalog No. 27 for Prices on Full Line.

KINGSTON SPARK COILS FOR Quality and Quantity

The phenomenal success of the Kingston Coil has induced many of the oldest coil makers in this country and Europe to try to copy Kingston quality and quantity. Watch them.

Kingston Switch
Price $1.00

Prices of Kingston Jump-Spark Coils.

Single cylinder plain box vibrator coil	$ 7.50
Double " " " " "	15.00
Triple " " " " "	22.50
Quadruple " " " " "	30.00
Single dash vibrator coil with switch	12.50
Double " " " " "	22.50
Triple " " " " "	32.50
Quadruple " " " " "	42.50
Sextette " " " " "	62.50
Units for dash coils	9.00
Motor cycle standard coil	9.00

Special Discounts to Manufacturers and Dealers.

Send for Descriptive Booklet. For Sale by all Jobbers.

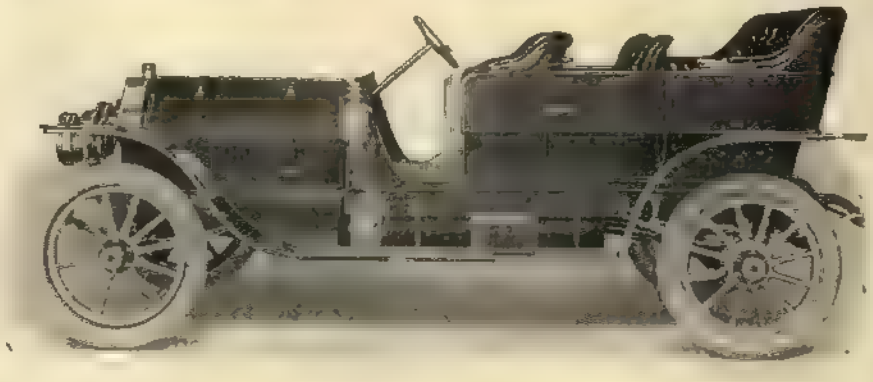
Kokomo Electric Co., Kokomo, Ind.

Canadian Trade Supplied by
JOHN MILLEN & SON, Montreal and Toronto

Making Comparisons

of what you get for your money is sometimes food for reflection. Let's consider—There are 12 cars on the market listing at $4000 —**The Gearless Car**—and eleven others.

The average Horse Power of the eleven, taking them at their **highest** catalogued power is 41 H. P. each. The average weight, at the **lowest** catalogued weight is 3000 lbs. each—That's an average of about **73 pounds each per H. P.**



The Gearless Great Six

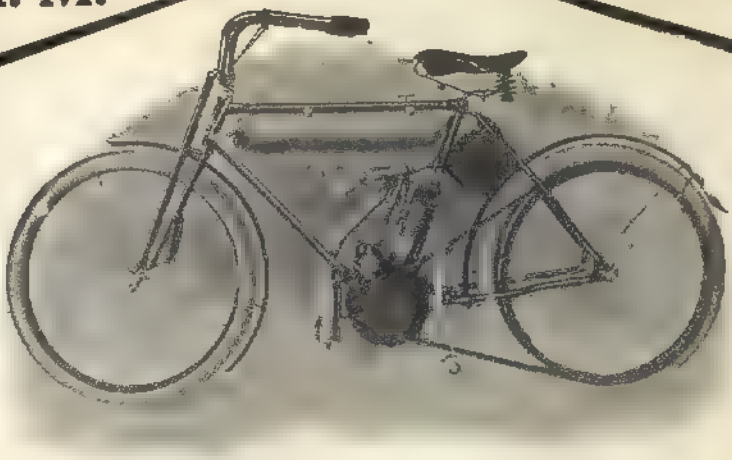
lists at $4000—Weighs (actually) 3375 pounds and develops **75 H. P. That's an average of 45 pounds per H. P.**—When called on for that "reserve of power" so necessary in surmounting hills and overcoming heavy road conditions, which car do **you** think would respond quickest and with least danger of accident to its mechanism?

Can we send you our new catalogue to-day? You will want **all** the details.

GEARLESS TRANSMISSION CO.

Rochester, N. Y. *Motor Car Dept.*

M. M. 1907



Instant Deliveries

Are what you should be getting at this late date, not promises.

We Are Making Instant Deliveries

To our Agents Hadn't you better place that order you have been keeping your customers waiting weeks for, where you can get

Instant Delivery

Of the best Motor Cycle ever sold, thereby saving your customers further delay and yourself a commission?

M. M., the machine that has more power, strength, stability, speed, endurance and ease of control than any other Motor Cycle built.

Write For Proposition

CHICAGO
WHIPPLE, The Motor Cycle Man
260 West Jackson Blvd.

DENVER
BROWN & BECK, 1737 Champa St.

NEW YORK CITY
GEO P. JENKINS, 10 W. 60th St.

SAN JOSE, CALIF.
A. C. BANTA & CO., 704 South 2nd St.

AMERICAN MOTOR COMPANY

715 CENTER STREET

Brockton **Mass.**

The "Brown" (English) Motor Cycle

One of the most popular motor cycles across the ocean is the Brown, here illustrated, which is made by Brown Bros., Ltd., Great Eastern street, London, Eng. This machine is made in three types, 2¾ H. P., 3½ H. P., and 5 H. P. The motor crank case is attached to a substantial cradle, strongly bolted to a lug on the front down tube, and the bottom bracket in the rear The cylinder and head of the motor are integral. Both valves are mechanically operated. The ignition system of the 3½ and 5 H. P. machines includes an accumulator, a make and break type contact breaker and E. I. C trembler coil, while on the 2¾ H. P. machine a plain coil is used. The Simms-Bosch magneto can be furnisht in place of the accumulator and coil if desired. The carburetor is a genuine Model H. Longuemare. The "Duco-Flex" belt is fitted to all machines.

The manufacturers are desirous of obtaining agents in America, and intend to vigorously push the sale of the machine on this side of the Atlantic as soon as arrangements have been made for appointing agents.

The "Brown" Motor Cycle, one of the leading English machines.

3½ H. P., list price $210; the other 7 H. P., list price $285. This line of machines is the outgrowth of six years' study and experiment on the part of A. J. Hilaman, the designer. His first machine was fitted with a 3 H. P. motor and is still in use to-day.

The Hilaman machines are built for long services, and tho of moderate weight, are strongly put together. Each model is proportioned according to its power and the work it is intended to do

The 2¼ H. P. motor has a 2¾x3¼ cylinder; 1¼-inch valves; 3 piston rings; ⅝-inch hollow wrist pin, and tool steel shaft running in phospher bronze bearings, ⅞-inch in diameter

The 3½ H. P. motor has a 3¼x3¼ cylinder; 1⅝-inch valves; 3 piston rings; tool steel shaft in bronze bearings, 1x2 inches on the drive side and a 32-lb flywheel, which is one-half the weight of the engine. The 7 H. P. motor consists of two cylinders of the same size as that of the 3½ H. P motor and set at an angle of 45 degrees. The flywheel is lighter, and the motor complete weighs only 10 lbs. heavier than the 3 ½ H. P. motor. The 2 cylinder motor is quite suitable for driving a light runabout

The Hilaman 2¼ H. P. Motor Cycle. Price $175. Made also in 3½ and 7 H. P. types, listing at $210 and $285 respectively

Hilaman Motor Cycles

A. J. Hilaman & Co., Moorestown, N. J., have lately entered the market with a line of three high-grade motor cycles, their 2¼ H. P. model, listing at $175, being here illustrated. Two other models are made, one

The 2¼ H. P. machine weighs 135 lbs., the 3½ H. P. 170 lbs. and the 7 H P. 190 lbs The wheel bases are, respectively, 52, 56 and 58 inches. The 2¼ H. P. motor is geared 6 to 1, the 3½ H. P. 4 to 1 and the 7 H. P. 2½ to 1.

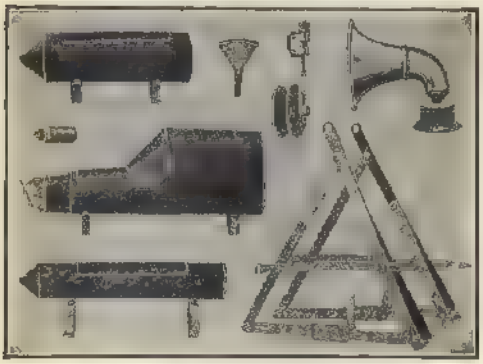
All these motors are fed by Hilaman vaporizers, manufactured by the same com-

pany and sold separately to the trade. Details of the constructive features of this vaporizer cannot be publisht at this time, but in general, it may be said that it is of the floatless type, with throttle, auxiliary air intake and adjustment for the gasoline. On the two-cylinder type there is a separate needle valve for each cylinder and two gas outlets

Widmayer's Latest Motor Cycle Specialties

Besides the motor cycle specialties illustrated in our April number, page 270, Frank B. Widmayer, 2312 Broadway, N. Y., has brought out several other attractive accessories in time for the early season trade These later specialties are here illustrated and are applicable to all makes of motor cycles, but especially to the Thor type of machine, which includes a large majority of the machines on the market.

The illustrations herewith are numbered and (1) shows a metal tool bag of cylindrical form with torpedo head. This tool receptacle fastens on the top bar of the frame between the handle bar and the saddle. It is provided with a door at the top fitted with a wire catch and a lock. No. 2 is a similar box for fastening over



W Jimayer s Latest Specialt es

and parallel with the Indian type of battery box, and it has a wire catch and lock.

No. 3 is a combined luggage carrier and stand. It swings up and around the gasoline tank on the Indian machine. It is fitted with four straps and forms a fine stand on which to test and makes repairs. Two styles are made of different weights for light and heavy machines, respectively.

No. 4 is an electric horn for motor cycle use, consisting of an electrically operated vibrating buzzer, and a diaphragm connected with a push button conveniently located. It is operated by the ignition battery current or from a small extra battery of three 1½x6-inch cells.

No. 5 is a pocket funnel, very small and neat, and fitted with a strainer. It fits the smallest filler vents on any motor cycle tank and is a very great convenience. No. 6 is a ball-bearing chain idler with an improved form of clamp. No. 7 is an improved spark plug designed especially for the 1907 Indian machine. It is insulated by a bushing which encases the spark plug terminal and secondary wire preventing the driver's getting an accidental shock when reaching down to adjust the carburetor

No. 8 is a new battery box which is fastened in the same place and by the same means as the Indian and Thor battery boxes. It holds three standard size dry cells 2½x7 inches

The "Racycle" Spring Fork

The Racycle safety cushion tri-spring fork is the product of the Miami Cycle & Mfg Co., Middletown, Ohio, and is furnisht as regular equipment on their 1907 Racycle Motor Cycles.

This fork combines the rigid and spring fork and in addition to having three heavy springs to receive direct shocks, it is also

The "Racycle" Safety Cushion Tri Spring Fork

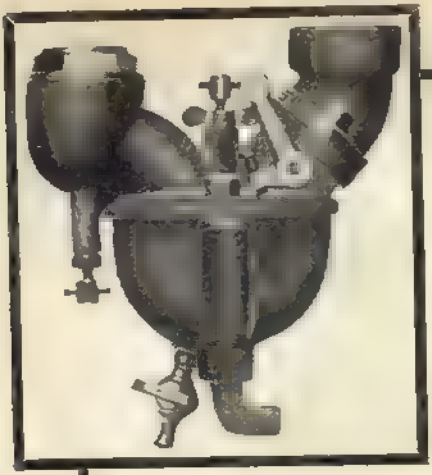
equipt with rebound springs which do away with all jar and vibration and make a cushion for the head and fork of the machine.

The fork is so constructed that it can easily and quickly be changed to a rigid fork by the mere tightening of the spring nuts with a hand wrench. The manufacturers guarantee against breakage of either springs or forks

---

The G. H Curtiss Mfg. Co., of Hammondsport, N. Y., is erecting an addition to its plant, which measures 30x60 feet.

The C. P A. A. appointed Webster as chairman of the committee to nominate officers, who will be elected at Atlantic City; his colleagues are C. E. Weaver, Kelly Handle Bar Co., and W. H. Graham, New Departure Co.



The Rutenber Carburetor

is the result of a careful study as to the requirements of the modern four and six cylinder high speed motors.

There are several carburetors on the market that will make your engine run, yet there are very few that will control your engine properly and make it run smoothly at all speeds.

The Rutenber will do this for you and a trial will prove the soundness of our assertions.

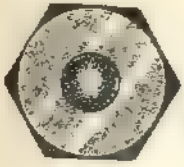
The above cut shows our Type A. 1907, and by turning the flange around, it can be used either as a vertical or horizontal outlet carburetor.

Send for Booklet and prices.

E. A. RUTENBER

800 Helm Street, Logansport, Ind., U. S. A.

GO WITH AND



With a GENUINE COES wrench you can tighten or loosen the most stubborn nut with comparative ease.

There is a style and size for every wrench purpose.

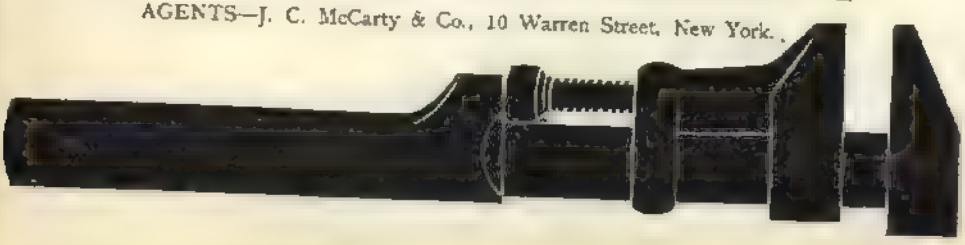
A GENUINE COES will not chew the corners off a nut, making it necessary to resort to hammer and chisel, but will take a clean hold, and turn it without marring.

The man who has "bumped" a stiff wrench problem, with a "near-Coes," in his sturdy right, is the man who will appreciate the real COES.

The man who has not "bumped" yet, will side-step a lot of trouble by buying the wrench with the star ★ trade mark, NOW.

COES WRENCH COMPANY

AGENTS—J. C. McCarty & Co., 10 Warren Street, New York.



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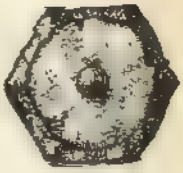

Without a Coes Wrench, you are "playing with fire," so to speak. You are constantly welcoming wrench troubles which you will not be able to meet.

There are many imitations, which almost "look the part" The fake gold-brick is just as bright and shiny as the real thing.

It pays in the end to buy a GENUINE COES in the beginning The star ★ trade mark is a guide to the wrench you need. It is the mark of quality.

The GENUINE COES is made of steel castings, hardened by our special process, and is 30 per cent stronger than any imitation.

Send for the Wrench Book.

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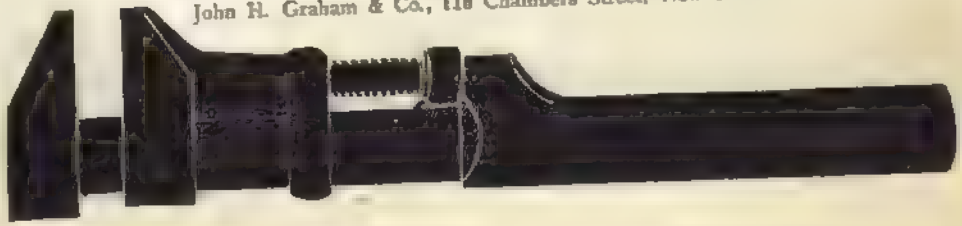
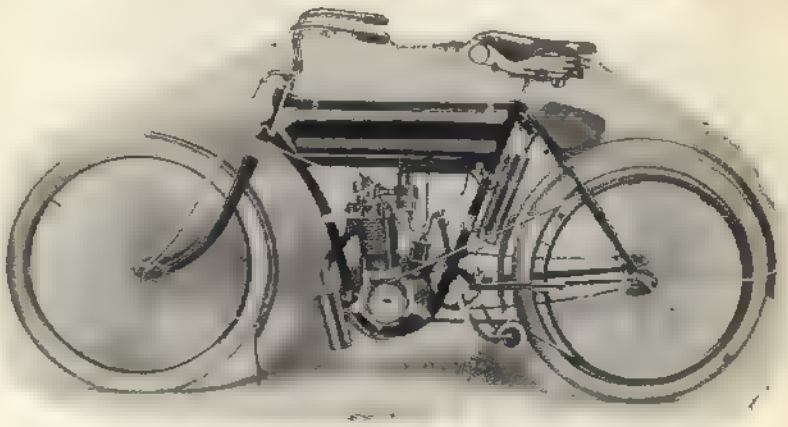


1907 Model YALE - CALIFORNIA MOTOR CYCLE



PRICE $185

The amount of interest displayed and number of sales made at the New York and Chicago Shows again emphasizes the fact that the **YALE-CALIFORNIA** is the motor cycle of the hour. Let us tell you about this perfection of mechanical skill and engineering. A card will bring our catalogue and proposition.

We are Delivering the Goods

We have room for a few more hustling agents.

WRITE TO-DAY

The Consolidated Manufacturing Co.

Station "B," Toledo, Ohio

I. H. WHIPPLE
260 W. Jackson Boulevard, Chicago, Ill
Agent

The Motor Cycle That Proves

M. M. **1907**

1907 **M. M.**

Compare every detail of the M. M. machine with all others and note its superior qualities; how much better it looks, how much simpler, how much easier its control, yet it has more stability, power, strength and speed than any other machine built.

Isn't there a good deal of pleasure, and more satisfaction in the knowledge that you are mounted upon a Motor Cycle that will take no one's dust on any road, at any time no matter what their mount may be? That's the feeling you can always have when riding an M. M.

In spite of the fact that we are now shipping and have shipped more 1907 models than all other American Manufacturers combined, we are still able to add to our present large output. This is owing to the fact that we made preparations early and have added largely to our facilities. Isn't it necessary to get something more than your customers' orders? Isn't the matter of delivery from the Manufacturer a far more important consideration? Then isn't it wisdom to place your energies where you are sure to get prompt returns?

We are delivering the goods instead of promises.

How about agency for 1907, immediate delivery.

Write for proposition.

AMERICAN MOTOR COMPANY

715 Center Street - - BROCKTON, MASS., U. S. A.

M.

M.

1907

Best Motor Cycle Built

and ready to deliver immediately to your customers.

That's our claims backed up by actual proofs of what our machines have done and are doing every day from the Atlantic to the Pacific and all the way between.

Why, one man in New Hampshire has run an M. M. every day all Winter with more than 12 in. of snow on the ground, and the thermometer, at times, registering 20 degrees below zero: forty miles a day up through the Franconia Notch, over two mountain ranges, one of which is over 3 miles long with a grade from ten to twenty per cent.: hasn't spent a cent for repairs this season, and covers this route at the rate of 30 miles an hour.

There's a reason why such feats are possible.

The M. M. has more stability, power, speed and endurance than any other Motor Cycle built regardless of name or price.

Notwithstanding our present greatly increased output we are still able to make immediate deliveries.

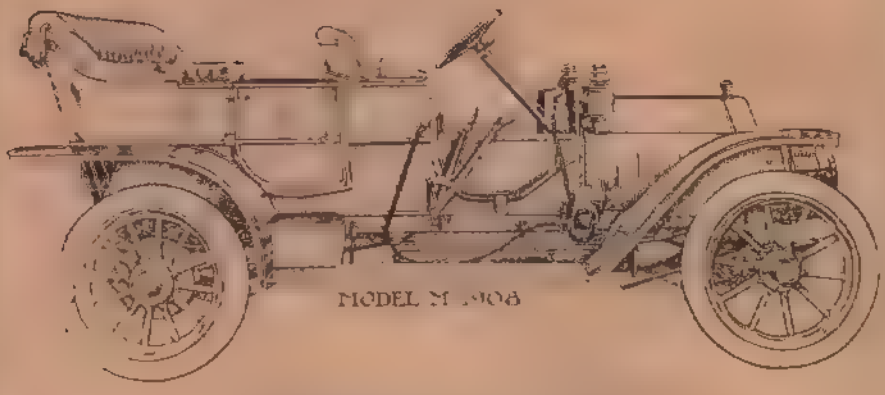
SPECIFICATION: TIRES: 2 ¼ " heavy corrugated tread G. & J. detachable,—POWER 3 H P., M. M. Motor, bore 3 ⅛", stroke 3 ¼",—CARBURETOR Triple air inlet, automatic adjustment, MUFFLER Expanding chamber, tubular exhaust,—TRANSMISSION: 1¾" double beat, flat endless mineral tan, RESERVOIR Tubular seamless brass, 5 quarts gasolene 1 quart oil, GEAR RATIO 4½ to 1. LUBRICATOR Automatic force pump in tank operated from rider's seat CONTROL Double grip on handle bar, SPEED 5 to 50 miles an hour,—FINISH Black enamel, nickel trimmings, WHEEL BASE: 51".

WRITE FOR 1907 PROPOSITION

AMERICAN MOTOR COMPANY

715 Center Street - - BROCKTON, MASS., U. S. A.

OLDSMOBILE
1908



SPECIFICATIONS

Wheel Base	112 inches
Seating Capacity	5 passenger
Motor	4 cylinder
Cylinders	4¾ x 4½
Horse Power	36
Speeds	3 forward, 1 reverse
Clutch	Cone type
Cooling System	Gear driven pump
Ignition	Jump spark with storage and dry cells
Brakes	Foot lever, external on hubs; hand lever, internal on hubs
Springs	Semi-Elliptical
Shock Absorbers	Foster, all around
Steering Gear	Worm and nut type
Axles	Timken
Tires	Front 34 x 3½. Back 34 x 4

Power figured by A. L. A. M. Formula

Price $2750

Send for additional information

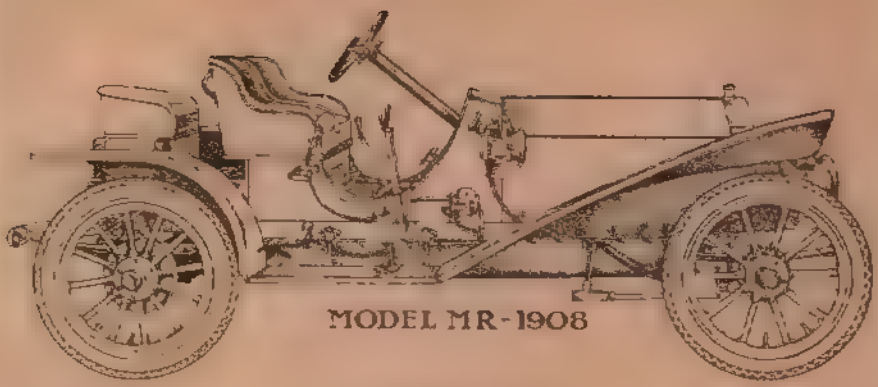
OLDS MOTOR WORKS

Member A. L. A. M.

Canadian Trade Supplied by
FREDERICK SAGER, Toronto

Lansing, Mich., U. S. A.

OLDSMOBILE
1908



MODEL MR-1908

SPECIFICATIONS

Wheel Base	106 inches
Seating Capacity	2 passenger, additional rumble seat
Motor	4 cylinder
Cylinders	4¼ x 4¼
Horse Power	36
Speeds	3 forward, 1 reverse
Clutch	Cone type
Cooling System	Gear driven pump
Ignition	Jump spark with storage and dry cells
Brakes	Foot lever, external on hubs; hand lever, internal on hubs
Springs	Semi-Elliptical
Shock Absorbers	Foster, all around
Steering Gear	Worm and nut type
Axles	Timken
Tires	Front 34 x 3½. Back 34 x 4

Power figured by A. L. A. M. Formula

Price $2750

Send for additional information

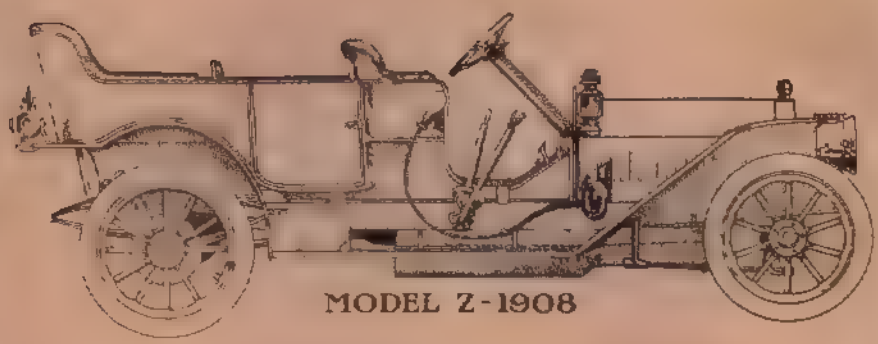
OLDS MOTOR WORKS

Member A. L. A. M.

Canadian Trade Supplied by
FREDERICK SAGER, Toronto

Lansing, Mich., U. S. A.

OLDSMOBILE
1908



MODEL Z-1908

SPECIFICATIONS

Wheel Base	120 inches
Seating Capacity	7 passenger
Motor	6 cylinder
Cylinders	4½ x 4½
Horse Power	48
Speeds	3 forward, 1 reverse
Clutch	Cone type
Cooling System	Gear driven pump
Ignition	Jump spark with storage and Bosch Magneto
Brakes	Foot lever, external on hubs; hand lever, internal on hubs
Springs	Semi-Elliptical
Shock Absorbers	Foster, all around
Steering Gear	Worm and nut type
Axles	Timken
Tires	Front 36 x 4½. Back 36 x 5

Power figured by A. L. A. M. Formula

Price $4200

Send for additional information

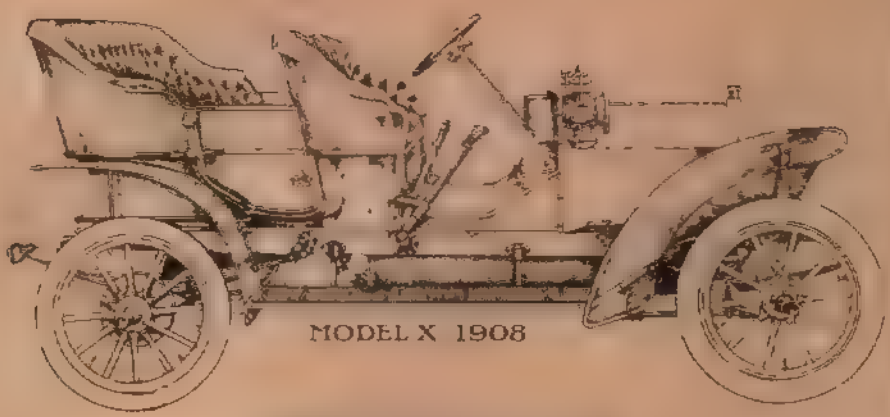
OLDS MOTOR WORKS

Member A. L. A. M.

Canadian Trade Supplied by
FREDERICK SAGER, Toronto

Lansing, Mich., U.S.A.

OLDSMOBILE
1908



SPECIFICATIONS

Wheel Base	108 inches
Seating Capacity	5 passenger
Motor	4 cylinder
Cylinders	4½ x 4¾
Horse Power	32
Speeds	3 forward, 1 reverse
Clutch	Cone type
Cooling System	Gear driven pump
Ignition	Jump spark with storage and dry cells
Brakes	Foot brake on transmission ; hand brake on hubs
Springs	Semi-Elliptical
Steering Gear	Worm and nut type
Axles	Timken
Tires	Front and Rear 32 x 3½

Power figured by A. L. A. M. Formula

Price $1900

Send for additional information

OLDS MOTOR WORKS

Member A. L. A. M.

Canadian Trade Supplied by
FREDERICK SAGER, Toronto

Lansing, Mich., U. S. A.

Pierce Great Arrow Cars

The George N. Pierce Company is manufacturing four models, a 30 H. P. four-cylinder car, with cylinders 4¼ inches diameter by 4¾ inches stroke; a 40 H. P. four-cylinder car, with cylinders 5 inches in diameter by 5½ inches stroke; a 40 H. P. six-cylinder car, with cylinders 4¼ inches in diameter by 4¾ inches stroke; and a 60 H. P. six-cylinder car, with cylinders 5 inches in diameter by 5½ inches stroke

Fig. 1. Six-cylinder, 60 H. P., 1908 Pierce Great Arrow. Cylinders, 5-inch diameter, 5½ stroke. The sub-frame has been dispensed with and the engine rests directly on two "I" beam cross girders which form two extra cross members to the chrome nickel prest steel frame. The change speed gear is bolted directly to the under side of the two center cross bars. The front cross bar supports the radiator and can be removed from the frame after the radiator, giving complete access to the motor. Semi-elliptic springs of very liberal length are used. Seven plate phosphor bronze bearings are used in the six cylinder engine. This automatic carburetor has been improved for 1908, and the cooling chamber is jacketed with a water. A double system of ignition is provided, each being entirely independent, and having its own set of spark plugs. Wheel base, 135 inches. This car, fitted with a suburban type of enclosed body, sells for $7750, and with touring body, $6500.

In all these models, the special alloy steels have been extensively used wherever desirable. The under frame is constructed of chrome nickel prest steel of channel section. There are four prest steel crossbars, the front one forming the radiator support. The sub-frame has been dispensed with. The transmission gear case is bolted direct to the underside of the two center crossbars. The engine is supported on two "I" beam cross girders, which form two extra crossbars, this being far superior to casting long feet on the crank case, which is of aluminum, these having a tensile strength of over 65,000 pounds to the square inch. A double universal joint is provided between the engine and the transmission case, so that any disalignment will not affect the bear-

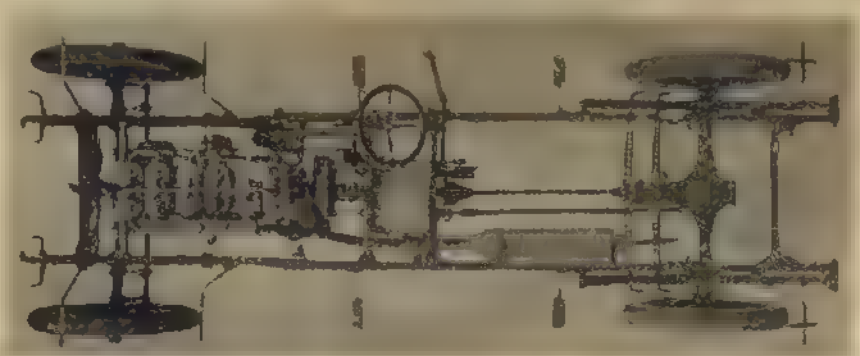


Fig. 2. Chassis of the six-cylinder 40 H. P. Pierce Great Arrow, showing the special cross frame members supporting the engine and peculiar front cross frame member for supporting the radiator, this member being removable. Also the large equalizing bars at the rear connected to the brake rods. Long semi-elliptic springs are used at both front and rear. The wheel base is 130 inches. This chassis, with the enclosed suburban body, sells for $6750 and $5500 with touring body. The motor cylinders are cast separately, the cylinders being 4¼x4¾.

Fig. 3. Inlet side of the six-cylinder 40 H. P. Pierce Great Arrow motor, showing the peculiar arrangement of the inlet pipes, which are provided with enlarged chambers, the water jacketed carburetor, the location of the magneto and the method of holding the same by a quickly removable band and the oil tank which feeds by gravity, and is located above the cylinders where the oil is always kept liquid from the heat of the engine.

ings. The front crossbar can be easily taken out of the frame after removing the radiator, by simply removing four bolts. This gives unobstructed access to the whole of the engine.

Semi-elliptic springs of very liberal length are used. These are made of the best alloy spring steel. The front springs are shackled at their rear ends, the shackles being above the springs, so as to work

Fig. 4. Exhaust side of the six-cylinder 40 H. P. Pierce Great Arrow Motor. This view shows the cross supporting members at the forward and rear ends of the engine case, which is of aluminum and cast without supporting arms, these cross members having a strength of over 65,000 pounds to the square inch. This view also shows the flexibly, shaft-connected, gear pump which forces the surplus oil from the receiving tank at the bottom upward into the supply tank at the top, from which it feeds by gravity to the cylinder's crank case and main bearings.

under compression instead of tension. This arrangement is adopted to prevent the possibility of the spring flopping under the shackles, and thereby endangering the steering. The rear springs are positively connected to brackets in front and shackles at the rear ends. These

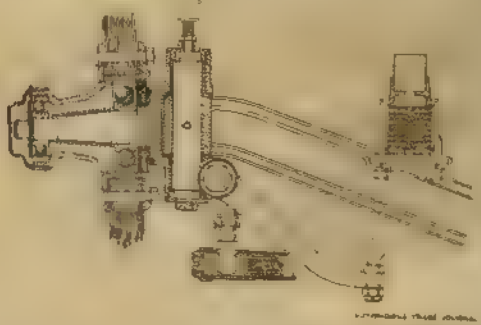


Fig. 5. Detail of the Pierce Great Arrow, front axle and steering pivot and stub axle. Note the large Hess-Bright ball bearings directly in line with the wheel spokes. The steering pivot has long bearing surface and is not mounted on ball bearings. This view also shows the method of connecting the steering links to the steering knuckle and the arrangement on an integral spring saddle of the spring leaves. These parts are nickel steel forgings. The cross steering rod of nickel steel tubing, is behind the front axle, where it is protected.

springs are fixt to spring seats that are free to oscillate upon the axle, thus giving perfect freedom. The whole of the torsion strain on the rear axle casing is taken by extra strong torsion rods. Truffault-Hartford shock absorbers are fitted on the front and the rear springs.

The drive is by propeller shaft and bevel gears and a torsion rod is provided to take the reaction of the drive and the hub brakes. Rubber buffers are provided to limit the deflection of the springs.

The steering knuckles and the steering spindles are made from nickel steel forgings, and they are of very liberal dimensions. The front wheels run on large ball bearings. The steering rod connections have large ball joints with a spring which automatically takes up lost motion. The cross steering rod is behind the front axle, thus preventing damage to the steering gear due to striking an obstruction. These rods are made from nickel steel tubing.

THE MOTOR.

The motor is of the vertical type, the cylinders being separate. They are ground smooth and accurately after machining. This has been the method employed by the company for over five years. The water jackets, valve chambers and cylinder heads are all cast integral with the cylinder proper. The jackets are cast flat on one side of the cylinder to permit of bringing the cylinders close together. At the same time a liberal water space is retained. The inlet valves are located on one side of the engine, and the exhaust valves on the other. The gears for the cam shafts and magneto and pump drives are thoroly enclosed. The magneto is on the inlet side, and the centrifugal water pump is on the exhaust side of the engine. The pistons have four piston rings. The wrist pins are of nickel steel, case hardened and ground. The forged steel connecting rod is fitted with phosphor bronze bushes at both ends. The crank shaft is a solid forging of nickel steel, giving a tensile strength, after special treatment, of over 110,000 pounds per square inch. All the bearings are acurately ground.

The crank shaft is supported by three adjustable phosphor bronze bearings in the four-cylinder cars, and seven bearings in the six-cylinder cars. The engine is controlled by a hand throttle in connection with the automatic carburetor. This has been improved, the mixing chamber being jacketed with hot water.

A double system of ignition is provided, each being entirely independent of the other, and each having its own set of spark plugs. The first system is by means of a storage battery and individual unit Autocoils. The second system is by means of an improved Bosch high tension magneto.

The radiator is set over the front axle. A positively driven, centrifugal water pump of great capacity forces the water thru the cylinder jackets, and an improved fan, driven by a flat belt, is placed behind the radiator. The gasoline is fed by gravity to the carburetor, which is low enough to be supplied even on a very steep grade and with an almost empty tank.

Fig. 6. Rear of Dash 1908 Pierce Great Arrow, showing the clutch and brake levers, change gear lever under the steering wheel, the emergency lever on the side, and the method of taking hot air for the carburetor.

LUBRICATION.

The system which has been used with success for the past five years is retained,

This consists of an oil reservoir attached to the upper part of the cylinders. This is charged with lubricating oil, and pipes conduct the oil from it to the main crank shaft bearings. The crank shaft journals and the short arms of the crank shaft are drilled thru their centers, and the crank shaft is also provided with radial holes at the center of the journals, so as to provide a passage for the oil from the main journal bearings to the crank pin bearings. A pump operated by worm gearing on the exhaust cam shaft drains the engine crank case, and returns it, after filtering, to the oil reservoir.

The commutator for the battery ignition is of the roller type. This is placed on a vertical shaft between the third and the fourth cylinders, and is actuated by a pair of bevel gears from the inlet cam shaft.

The change speed gear gives three speeds forward and one reverse, with a direct drive on the high gear. It is fitted with Hess-Bright ball bearings. All the gears are made from chrome nickel steel. The conical friction clutch is of aluminum, with a leather face, and fitted with cork inserts. These effectually prevent burning of the leather and admit of a more gradual engagement.

AXLES AND BRAKES.

The front axle is a solid, one-piece drop forging of "I" beam section, made from a specially heat-treated steel of great toughness. There are no welds in this piece, and instead of having the usual drop in the center to clear the engine crank case, it forms an inverted arch of very large radius, thus avoiding sharp bends.

The rear live axles are made from chrome nickel steel, as also are the compensating gear and bevel gears. The enclosing tube around the live axles is of nickel steel. The live axles run on large ball bearings, as also the bevel pinion shaft.

Double brakes are provided. The brake drums of large diameter are attached to the hubs of the rear wheels. The hand brake operates on the outside of the drums and the foot brake on the inside. The latter is interconnected with the clutch; the former is not. Both sets are equalized. The material of the body and the dash is cast aluminum.

The front seats are of the individual type. The side entrance doors are extra wide, and the rear seat is ample for three passengers, with abundance of leg room. The 30 H. P. body is seated for five passengers. The 40 H. P. and the 60 H. P. bodies are seated for seven passengers, the two extra seats in the tonneau being especially comfortable. These are made so that they can be revolved or folded according to choice.

The smaller four-cylinder car is $4000, the larger four-cylinder car is $5000, the 40 H. P., six-cylinder, 130-inch wheel base car is $5500, and the 60 H. P., six-cylinder, 135-inch wheel base car is $6500. The prices with the special suburban enclosed bodies are somewhat higher.

Madison Square Garden Show—View of the first gallery, which was added this year for the first time to the exhibition space.

The entire automobile and motor boat trade use the January Journal as a reference book thruout the year on account of its most important feature, the complete, accurate, classified directory of the trade which it contains. If you are not a subscriber to the Journal, send $2.00 at once, and start your subscription with the January number. The directory which it will contain is worth more than the price of a whole year's subscription, but is included without extra charge.

The Blomstrom "30" 1908 Cars

HUGH DOLNAR.

The Blomstrom "30" line for 1907, manufactured by the Blomstrom Manufacturing Company, Detroit, Michigan, was two cars, a five passenger touring car and a three passenger runabout, same chassis and same price, $2250. This same line of cars, a five passenger touring car and a three passenger runabout, one chassis only, will be continued for 1908 under the same name, The Blomstrom "30.", and at the old price $2250, altho the 1907 chassis has had detail improvements made, notably an increase in cylinder dimensions from 4 3-16x4½ in 1907 to 4⅝x4½ for 1908 which gives something like 5 H. P. more than the Blomstrom 1907 "30" motor, altho the "30" is retained in 1908 for advertising purposes. The chassis wheel base has been increased from 106 to 112 inches, giving 6 inches more length to the tonneau floor and permitting an increase in the tonneau-door width The 3-passenger runabout body is carried over to 1908 without change, other than increase of length due to the added six inches of wheel base.

This company is making its own four-cylinder motors. The cylinders are cast in dual-units and are of such proportions as to make the connecting rods symetrical, with the rod-bodies in the middle of the wrist-bearings. This somewhat increases the motor total length, but greatly improves the wearing qualities of the connecting-rod boxes

The Blomstrom factory has been augmented as rapidly as possible during the present season. The buildings are of brick, and the Blomstrom Company occupies over 60,000 square feet of floor surface.

The capacity of the Blomstrom factory is two completed cars per day, and the expected total 1908 production is about 200 Blomstrom "30" cars, 125 or 130 5-passenger touring cars and 70 to 75 3-passenger runabouts.

The Blomstrom "30," 1908 5-passenger touring car has a wheel base of 112 inches, gage 56 inches, and tires all 32x3½ inches. The motor has four cylinders, 4⅝x4½ inches, 4-cycle, water-cooled, nominal 30 H. P. Sliding gear speed-change, 3 forward speeds and a reverse with bevel gear to the divided rear axles are used The weight is 2250 pounds and the price $2250, including 5 lamps, mats, horn and tools, all ready for the road. The cape top is $100 extra.

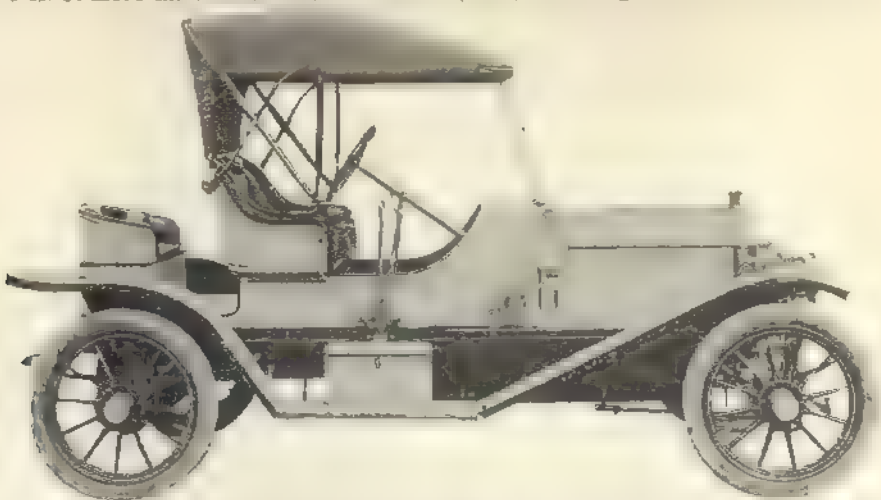


Fig. 1. 1908 Blomstrom "30" three-passenger runabout. An increase of six inches has been made in the wheel base, and the motor has been increased from 4 3-16 by 4½ to 4 5-8 by 4½ inches. The body is practically the same as in [illegible] The wheel base is 112 inches, gage, 56 [illegible] tires 32x3½ inches, weight, 2100 pounds, p[illegible] $[illegible] including five lamps, mats, horn and tools.

The Blomstrom "30", 1908 3 passenger runabout has the same chassis specifications as the touring car. Its weight is 2100 pounds, and the price $2250, including 5 lamps, mats, horn and tools, ready for the road. The cape top for this Blomstrom "30" runabout is a recent design, reaching far forward in front, but having only two bows. The price of this top as shown is $90.

NOTABLE FEATURES.

These 1908 Blomstrom "30" cars are the last thing in motor car design thruout. C H. Blomstrom is one of the most experienced of motor car builders, and his designs are of carefully selected details from accepted practice, with many original features of decided merit. The clutch is an original Blomstrom design it consists of an exterior bronze ring, having faces inclined 17 degrees on each side. The inclined faces of this ring, which turns with the fly-wheel, but is free to move a

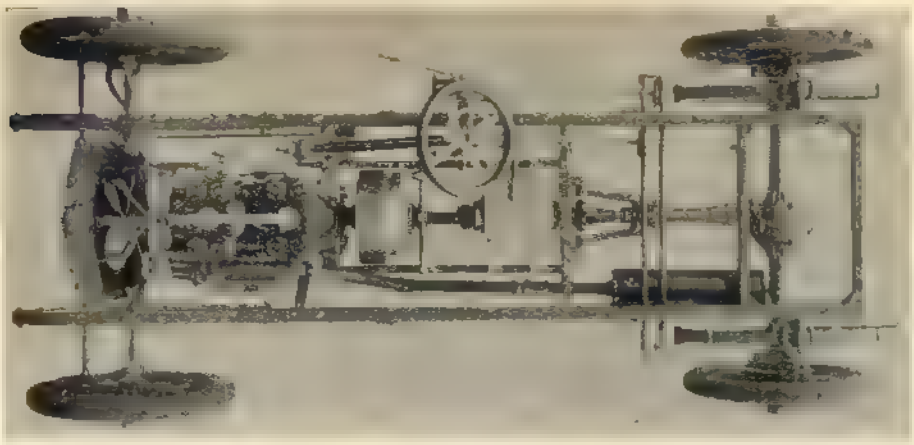


Fig. 2. Plan of 1908 Blomstrom Chassis, showing the sub-frame, the enclosed clutch, and the forked forward end of the cardan shaft housing, which acts as a torsion rod

little way either to the front or rear, stands between two-grey-iron, beveled members, which are pinched by toggles and bell-cranks against the bronze-ring bevel faces, as shown in Fig. 3. The grey-iron clutch member inclined faces are fitted with cork inserts, giving a soft engagement and a powerful slipping drive.

The touring car bodies are "straight line" effects, with wide doors and ample room. The runabout body has the front board deeply cowled with sheet steel and the cowl sides are continued to the front seat panels, so as to enclose the driver's foot-space at the sides without the placing of doors.

The sliding gears are by Warner, the steering action is worm and worm-gear sector and the springs are half-elliptics in front, and full-elliptics in the rear. The propeller shaft casing is in integral assembly with the bevel-gear housing at the rear and has a long fork at its front end which is jointed at each side to the chassis-frame cross-girt brackets, in line with the single universal-joint between the line-shaft and the propeller shaft.

The axles are all tubular, by the Weston Mott Company. The front wheels are on 2 circles of balls in adjustable 3-point bearings. The divided axles are on Hyatt rollers and have the driving wheels keyed to their tapered outer ends with hex nut retension. The propeller shaft is also on Hyatt rollers at both ends, bevel pinion thrust taken by a disk ball-bearing. The spur balance-gear has ball-disks at each end.

THE SPRINGS.

The front springs, half-elliptics, are 38 inches long by 2 inches wide, 7 leaves, banded at each end, tongued and grooved, jointed forward and linked in the rear. The rear springs, full elliptics, are 38 inches long by 2 inches wide, 7 leaves, tongued and grooved and banded, fixt to the rear axle perches and revolubly attached to the chassis-frame bracket studs on top. Neither struts nor torsion arm are fitted.

The chassis frame is prest steel, 4 inches greatest side depth. The motor and sliding-gear box are placed on a sub-frame. The chassis frame is 34 inches wide, with sides straight and parallel.

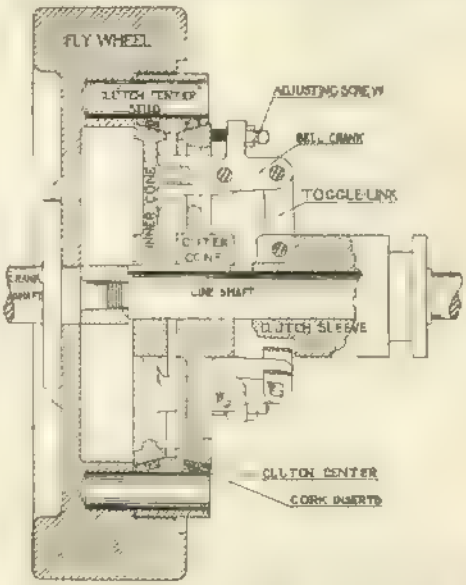


Fig. 3. Mid vertical section of 1908 Blomstrom "30" clutch. The clutch is normally engaged by a coiled spring, which pushes the sliding toggle member forward and so actuates the three bell-cranks which pinch the front and rear clutch disks, fitted with cork inserts, against the bronze ring 17 deg. internal faces, placed between the two co-acting grey iron clutch members. The bronze clutch ring is slipt on two cylindrical studs projecting rearwardly from the fly-wheel, so as to freely adjust itself to equal contact with the two grey iron clutch members.

THE MOTOR.

The cylinders 4⅝x4½ inches, are cast in dual-units, symetrical, two valves on each side, all valves steel drop-forgings, all the same diameter with 45 degree angle faces, and all ports are 1¾ inches diameter. Two cam-shafts are used, one for each side of the motor. The cams are applied to the cam-shafts, each cam

retained with one pin. Four hand-hole covers can be removed to give access to the eight cams and rollers. The crank-box and oil-basin are aluminum castings, joined in the plane of the crank-shaft

8X15

ton bodies are cylindrical, ground to 2-1000ths smaller than the cylinder diameter. The piston-top diameter, above the rings, is 6-1000ths smaller than the cylinder diameter.

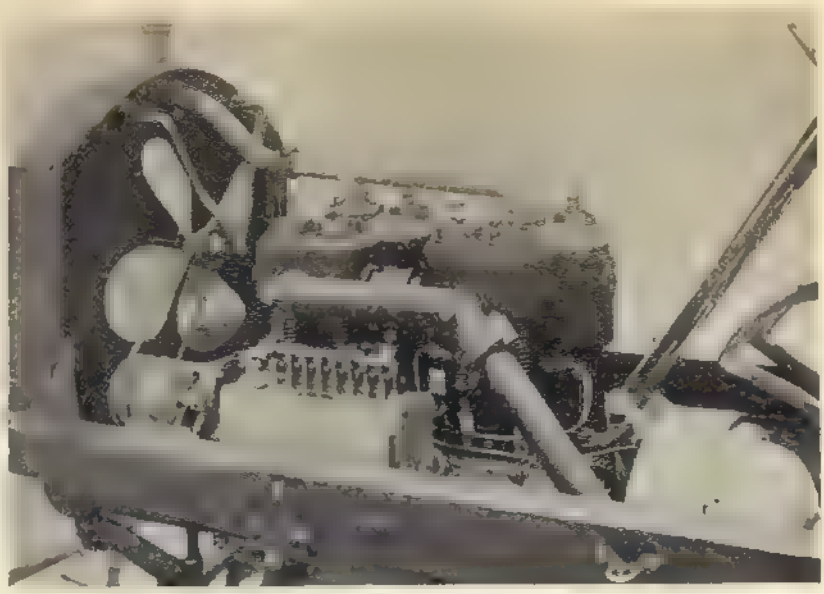


Fig. 4 Blomstrom "30" left side of Motor in chassis

The water circulation is by a gear-driven two-pinion pump, and all the motor water-piping is brass tubing, with rubber-hose lengths to the radiator top and bottom

BRAKES

The brakes are external bands and internal shoes, on and in prest steel rear-hub drums, 10 inches diameter. The internal brakes are used for ordinary, and the external for emergency service. No

Fig. 5 Right side of Blomstrom "30" Motor showing the dual unit symmetrical construction brake pipe and ball and socket linkage for operating the front e

The cylinders are fixt to the face-plate of the boring lathe in a special turn-around fixture, bored and reamed with turret-held tools and then finished by grinding accurately to diameter. The pis-

other brakes are fitted. All brake bands and shoes are camel's-hair-felt faced, and brake application is thru eveners, to 3-hole levers for the exterior bands and thru cam-end rockers for the internal shoes.

Lubrication is by a gear driven force-feed, 8 lead, mechanical oiler placed along side the motor-base left-side, under the hood. The ignition is by single jump-spark plug in each cylinder, storage battery current supply

CONTROL.

The spark and throttle are governed by ratchet-retained levers on top of the hand-wheel. Steering is by a worm and worm gear sector. There are two outside levers, both latched. The outer lever when pulled backward first disengages the clutch and then applies the external emergency-brakes thru an evener. The inside hand lever rocks sidewise in a wide slot to select the gear shift, and is normally held in neutral position by springs on each side. It engages the inside or outer gear shift rocker, as may be, when the hand-lever is rocked sidewise, after which forward or rearward movement of the hand-lever effects the desired gear-shift. The foot board has two pedals only; that on the left is pushed forward to disengage the normally spiral-spring applied clutch. The right pedal is pushed forward to apply the internal, ordinary brake-shoes.

Lane Steam Roadster

The exhibit of the Lane Motor Vehicle Company, of Poughkeepsie, N. Y., shows a high powered roadster and a 7-passenger touring car, with identical chasses, motor compound, cylinders 3-⅞ and 6-¼ inches, bore by 4 inches stroke, fire tube boiler, 325 pounds working pressure, 30 to 120 H P, also a 5-passenger touring car, and a 5-passenger runabout on a different chassis, motor compound 3-¼ and 6-¼ inches, cylinder bores by 3½ inches stroke, fire tube boiler, 325 pounds working pressure, 20 to 50 H. P

The Lane motive assembly includes a large, vertical-tube air-cooled condenser in front, which returns 90 per cent. of the water to the boiler The price of these Lane steam cars ranges from $1800 to $3100, and the outside appearance of the cars is made to conform to that of the ordinary gas engine driven vehicle The fuel consumption is from 7 to 12 miles to the gallon, with from 4 to 8 miles to the gallon of water supply.

The Lane water and fire control are wholly automatic, no pumps fitted for hand use, while the motor is working, which makes it possible to assert that the steam drive is a most convenient and reliable for motor car service.

This is the second New York show number. The December number will be the Chicago show number and will contain in addition to descriptions of all new things at the Madison Square Garden Show not described in this issue, a forecast of the Chicago show. The January number will be the Eighth Annual Buyers' Guide Special and each succeeding issue will have some special features. You cannot afford to miss any. If not a subscriber send $2 at once to the Cycle & Automobile Trade Journal, Forty-ninth and Market streets, Philadelphia, Pa

Grand Central Palace Show—Main hall, looking towards the entrance.

The Eight Cylinder Hewitt

VICTOR LOUGHEED.

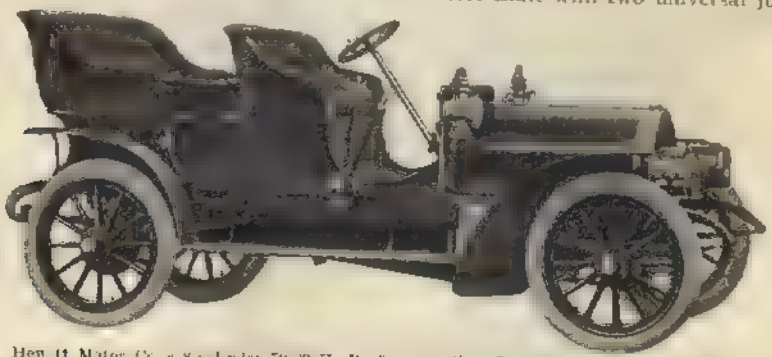
The 1907 cars of the Hewitt Motor Co., of 6-10 East Thirty-first street, New York City, are rapidly gaining a standing that is unusual for a product so new, but which is thoroly deserved by the novelty and merit of the Hewitt constructions. The company continues its single cylinder runabout and touring car, previously described, also the 4-cylinder truck. The 8-cylinder touring car is the latest and most interesting addition to the Hewitt line and is described here in some detail.

The eight-cylinder touring car is propelled by a V-shaped motor, with four cylinders in each row, the object being that of reducing crank-shaft complication—a tendency that has expressed itself in numbers of V-shaped motors that have appeared in the past

placed a cover plate for convenience of [illegible] in the battery and mulzed to hold [illegible] cocks. The [illegible] is 4 inches, and stroke 4 inches, [illegible] the rated 30 [illegible]

A unique detail is the arrangement of the exhaust passage, which points upwards, leading directly into the large manifolds—one for each four cylinders—from which the gases escape by individual pipes to the muffler in the rear. The arrangement is such that the branch cover of two cylinders spans over one exhaust outlet

Ignition is of the high-tension type, with Simms-Bosch plugs located in the inlet-valve caps. A Simms-Bosch magneto, placed on the center of the crank case between the rows of cylinders, and driven by a short shaft with two universal joints from



Hewitt Motor Co.'s 8-cylinder 50-60 H. P. Touring Car. Cylinders 4x4½ in., 2-speed planetary transmission, wheel base, 110 inches, tires, 34x4½. Price $4500, with Limousine body, $5500

The cylinders are ninety degrees apart each inclined forty-five degrees from the vertical, and receive fuel from a uniform branched manifold connecting with the carburetor on the right side of the motor. The inlets to each pair of cylinders are in the form of inverted, bow like equalizing pipes, and are held by two bolts in each cylinder. To these bows the fuel comes thru an inverted Y, clamped by a single bolt to each pair of distributors, thru a system of splitting and clamping the openings

The carburetor is of Hewitt design, float-feed, with a hollow bronze float. A mercury dashpot, as shown in the accompanying sketch, controls the air intake in a very superior manner, assuring a degree of flexibility that is materially beyond that of the ordinary automobile engine.

The throttle lever is located in the usual place, above the steering wheel, and is interconnected with a pedal accelerator on the toeboard.

Each cylinder is held to the aluminum crank-case by four bolts, and the waterjackets and heads are cast integral.

The valves are all on the inner sides of the cylinders and the whole sixteen of them are worked from a single camshaft.

In the head of each cylinder, there is

the gear assemblage supplies the current. Driven by the same shaft as that driving the magneto is the eight-point vertically placed distributor, specially designed by the Bosch engineers for the Hewitt people, who build it. The distributor is just back of the radiator

The spark advance is controlled by a lever placed on the dashboard, instead of above the steering wheel

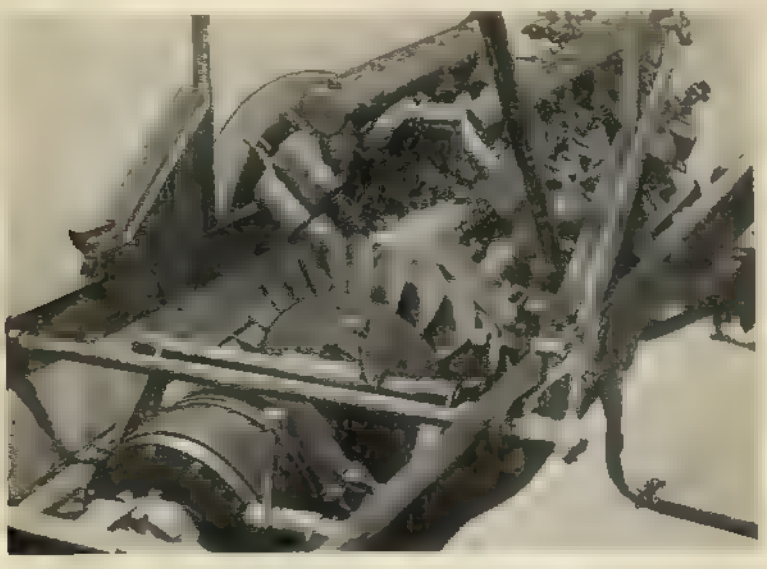
The connecting rods are forged of nickel steel, I-section, with the caps held on by two bolts and the bolts in turn fastened with snap rivet heads and locknuts, while where the bolt passes thru the connecting rod a special reinforced nose is forged

The piston pins are hollow and of hardened steel, working in hardened steel bushings 1⅝ inches in diameter and 2⅛ inches in length. The crank pin bearings are 1⅞ inches wide by 2¾ inches long, crystallite-lined

The crankshaft is of the three-bearing type, with bronze bearings, also crystallite-lined. The flywheel bearing is 2 inches in diameter and 6½ inches long. The middle bearing is 3¾ inches long, and the front bearing 3½ inches long

All valves are 2¾ inches in diameter, over all, with 2-inch clear hole and 7-16-

inch stems. They are of high-nickel steel, with large fillets, and all are mechanically-operated and interchangeable, being removable thru brass valve caps provided with



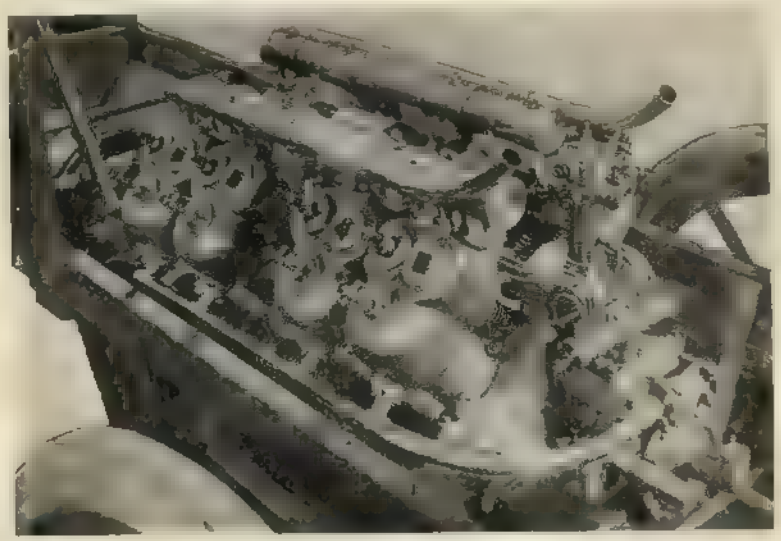
Rear view of Hewitt 8-cylinder Motor, showing flywheel fan and planetary gear

square recesses for a special wrench.

The flywheel is keyed, with two keys, on a taper on the end of the crankshaft, and is unusually light because of the eight-cylinder construction. Its shape is rather peculiar, it carrying twenty-four sheet steel suction-fan blades, riveted to a steel hub and housing the whole wheel.

The engine, complete, weighs 590 pounds —less than 10 pounds to the horsepower— and the claim is made that thru the close and even sequence of impulses the wear on tires is reduced very much below the average.

The speed range claimed is from three miles an hour to seventy miles an hour on the high speed, making gear-changing practically unnecessary. The support is by three crankcase feet on either side, each foot being held to the frame by a single bolt.



Three-Quarter View of Hewitt Eight-Cylinder Motor. Note double head of circulating pump, arrangement of exhaust, inlet and water piping and valve arrangement and Lubricator across front

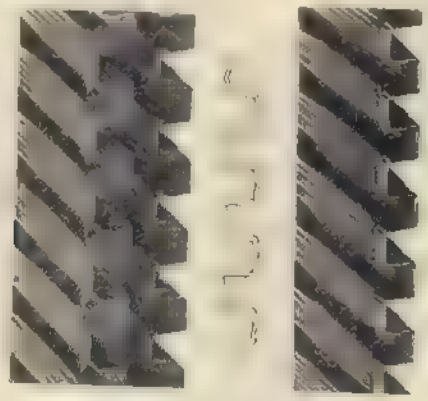
COOLING

The cooling water enters at the bottoms of the jackets, rises vertically, and after passing up and around the cylinder and the valve chambers comes out at the highest

point. In this way there is no possibility of steam or water pocketing.

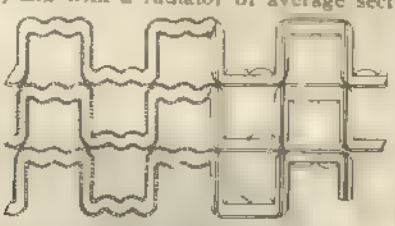
The circulation is by a bronze centrifugal pump, placed in front and provided with a T outlet—one branch connected with each set of four cylinders. Air circulation is solely by means of the flywheel fan.

The Livingston patented radiator, which is supplied to the trade by the Hewitt Co., is used, giving a square-tube effect, without the complication of that construction. Details of this radiator are shown in the illustrations printed herewith, its essential feature consisting in the use of corrugated vertical plates, clamped together in pairs, and fluted at certain central portions, so as to provide ample water and air space with minimum weight and size. These radiators will stand as much as forty pounds internal pressure without bursting. The free water flow, long water channels, low price, and freedom from leaks, are special merits to which attention is called.



Partially assembled section of Hewitt-Livingston Radiator, showing fluted construction, ample water spaces and length of channels.

Freezing absolutely does not cause leakage, and with a radiator of average section, with a large water space, it is said that from twenty to twenty-five gallons a minute can be circulated without material pressure. Also, as high as 9,276 square inches of air and water surface is available for each square foot of frontal area.



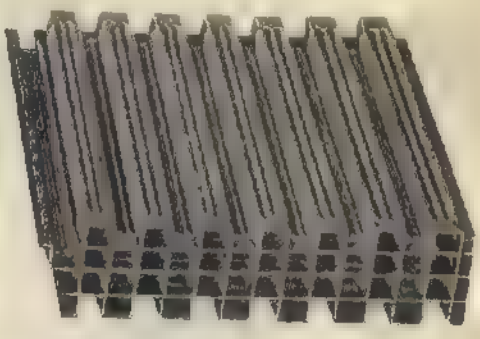
Cross section showing water space and corrugated tube construction.

THE CHANGE GEAR

Because of the extreme flexibility of the motor, only two speeds forward and reverse are required, and these are readily provided in the stock models by a planetary gear, unique in that all of its gear wheels are of alloy steel. A sliding gear, however, is optional.

Between the flywheel and the gear case a square block is placed, constituting a universal-gear arrangement.

The attention paid to the details of the planetary gear is particularly noteworthy, the high-speed cone, for instance, being lined with fiber blocks 3½ inches long. All shafts have three keys, and the clutch is thrown against a hard-steel plate, to which springs, set in pockets, are attached. These springs press the castiron cone against the fiber-lined high-speed cone. The thrust is taken up by two steel collars, hardened, and backed by an extra strong spring. The movement to engage or disengage is only 1-16 inch. Bronze bushings are used thruout, and the gears are all four-pitch.



Tubes of Hewitt-Livingston Radiator, finished and ready for folding.

LUBRICATION

Lubrication is by the Hewitt positive oil pump—a very simple device consisting of a plurality of small rotary-gear pumps, similar to those used in circulating the water in many cooling systems, and ranged in a number equal to the oil leads that are to be fed, across the front of the engine. These pumps are connected with the motor, so that the feed of the oil must vary with the speed of the engine. Each pump consists of a castiron plate, in the face of which is inserted a pair of small steel gears, accurately filling the holes in which they are set. Thru one of these is a square central hole thru which the common drive shaft for all of the pumps passes. Thru the other gear is a round central hole that serves for a bearing. All of the gears are fed from a single hole that acts as a feed for all the plates, and each plate is drilled so as to discharge its own quantity of oil from a separate outlet above. Thus is secured a single feed and a multiple discharge under pressure. The quantity of oil led to each bearing is regulated by the thickness of the gears and the depth of the holes in which they run. Any number of plates can be added to or taken from a series, with a view to working any number of outlets required. Very thick oil can be used, even vaseline failing to clog, and in addition to its other advantages, the cost of this pump is very low. The pump of

the eight-cylinder car is carried in front of the motor, with twelve leads.

The planetary gear is oiled by one of the leads, which communicates with a recess at the rear of the crankcase, whence the lubricant is thrown into the case centrifugally, where it works gradually out at the ends of the shafts, which run in bushings provided with extremely large oil grooves.

Hewitt Positive Oil Pump. This pump is sold to the trade separately by The Hewitt Motor Co.

Each cylinder is oiled by its individual lead, there being a boss and an oil groove surrounding the inside of the cylinder, registering with the groove in the piston at certain positions in the stroke.

CONTROL.

All speeds are controlled by pedals—a decidedly unusual method. The high speed is on the left, the low in the middle, and on the right is the combined running-brake-and-reverse pedal. A ratchet-retained hand lever at the right, applies brakes of the internal-expanding type located within the rear-wheel drums.

The final drive is by propeller shaft with a square-lock universal joint at the front of it. The gear ratio here is three to one, giving easily a speed of sixty miles an hour. The differential is of the Hewitt bevel-gear type, with nickel-steel six-pitch gears.

The front axle is forged of nickel steel, with octagonal cross-section and Elliot steering yokes formed integrally. The rear axle, of course, is tubular.

The wheels are all of the twelve spoke type, with tires 880x120 mm. The wheel base is 110 inches.

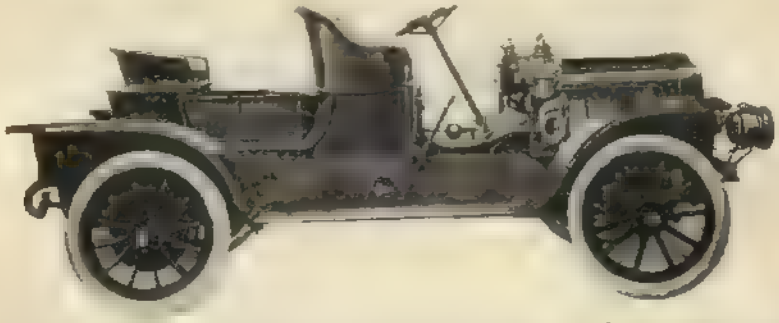
The springs are half-elliptic, front and rear having each eight leaves. Those in front are under the frame, while those in the rear set out close to the wheels. All four springs are pivoted in front and shackled in the rear.

The frame is of the usual channel section, and the mechanism from behind the radiator to behind the change-speed gear is protected by a metallic pan hung under it.

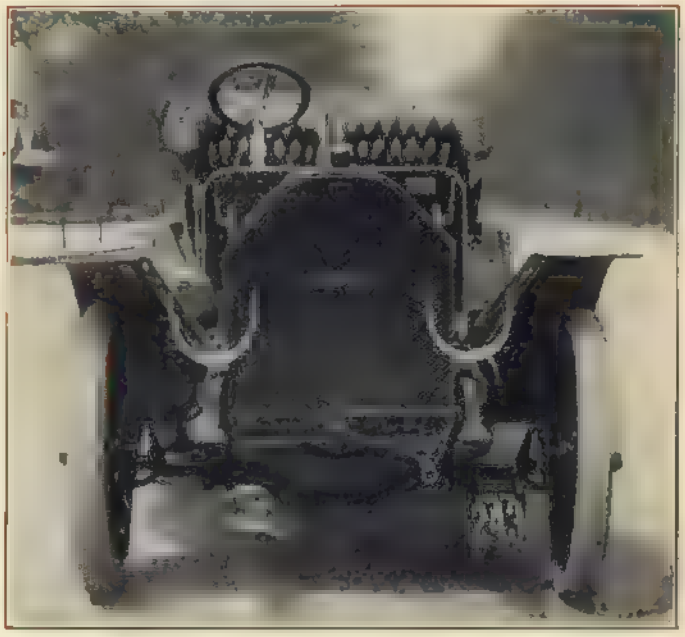
The chassis price is $4,000, while the touring body costs $500 more and limousine or landaulet bodies $1,500 more.

The National Professional Chauffeurs Club, located in New York City at 1947 Broadway, was organized to encourage the education of its members and to bring them to a high standard of efficiency that employers requiring the services of reliable and responsible chauffeurs will recognize the advantage of employing members of this association.

Mr. A. B. Barkman, for some time chief of the sales department office staff of the Maxwell-Briscoe Motor Company at Tarrytown, N. Y., has been appointed successor to Mr. C. W. Kelsey as assistant manager of sales for that company. The sales management, as in the past, will be under the general direction of Mr. Benjamin Bris-



Deliveries have now commenced of the Model "G" 30-horse power White Steam runabout above illustrated. The chassis of this car is identical with the other Model "G" Whites, except that its wheel base is [illegible] inches and it is supplied with 115 inches in the other models of this model, and [illegible] is gearing, for [illegible] higher speeds. A distinctive feature of the body work of the White runabout is the arrangement of a combination sliding and folding door at either side of the rumble seat, which adds not a little to the general business-like appearance of this powerful machine. Another distinctive feature is that back of the rumble seat a good-sized space is provided especially to accommodate baggage and a small dust-proof trunk is offered which exactly fits this space.



Our 1907 output is sold, and we are now delivering 1908 models of the

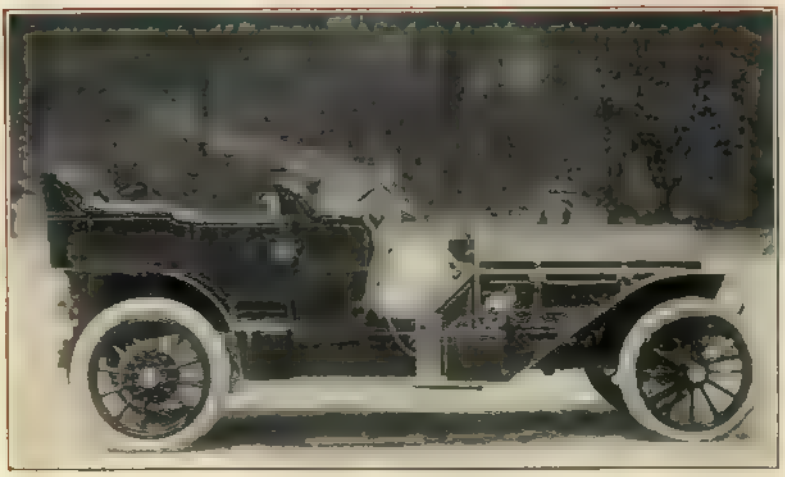
GREAT

Chadwick

SIX

The car which is 365 days ahead of all others

SEE NEXT THREE PAGES)



Great Chadwick Six

6 cylinders, 5″ bore and 6″ stroke. Weight, exactly 3000 lbs.
Price, F. O. B., Philadelphia, $5,500.

The GREAT CHADWICK SIX is not a racing car. It is a comfortable, safe, practical touring car, having all the advantages of great speed, power, strength and mechanical refinement of detail of the best Vanderbilt Cup Racers, with the added advantages of comfort and luxury to be had only in the most expensive, high-class touring cars.

12 broad claims which we are prepared to prove in your city and on your roads

(For details see fourth page of this advertisement.

1. We have the most successful six cylinder touring car in the world
2. " " " " powerful "
3. " " " fastest " "
4. " " " strongest " "
5. " " " safest " "
6. " " simplest high-powered touring car in the world
7. " " lightest " "
8. " " " quietest " "
9. " " " most easily-controlled high-powered touring car in the world
10. " " " " dependable " "
11. " " " advanced type of " "
12. " " " " luxurious " "

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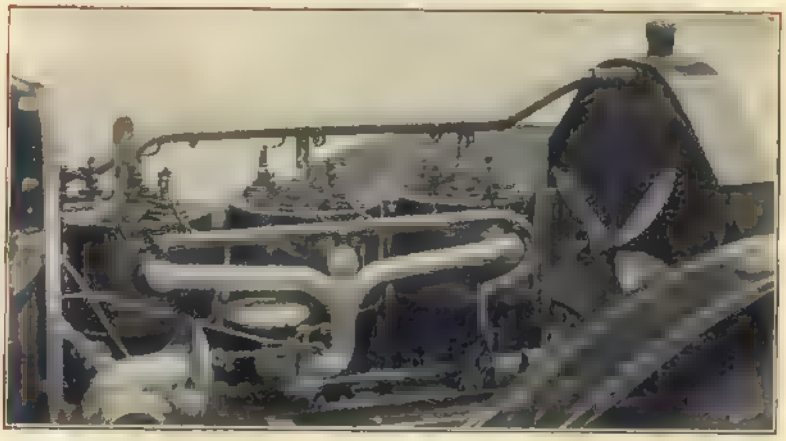
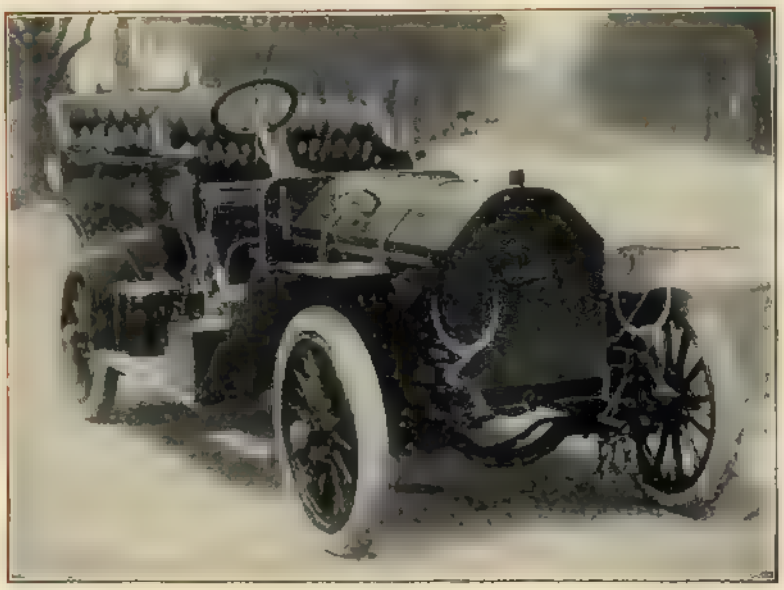


Great Chadwick Six

The **Chadwick** design is such that it is possible to build a large six-cylinder engine which occupies very little more space under the hood than the ordinary four-cylinder type.

The constant explosions resulting from the increased number of cylinders in the six-cylinder type gives a constant power which makes the engine sufficiently flexible to run evenly, quietly, and smoothly. There is a noticeable absence of vibration; there is an ease of control such as cannot be had with the four-cylinder car; there is a reserve power which enables the operator to keep up a uniform speed on either hills or level roads; there is a flexibility which allows of the car being run on the high speed, on either crowded city streets, or rough country roads.—up hill or down.

(SEE 4TH PAGE FOR ADDRESS)



Great Chadwick Six

We are now on a tour through the United States with our original demonstrating car, which won the great touring car events in the Wilkes-Barre hill-climb, and are prepared to prove to you in your city, on your roads and hills that the GREAT CHADWICK SIX, in comparison with any other touring car made in any country in the world is all that we have claimed for it in this and our other advertisements.

If you are sufficiently interested to the extent of investigating, we can convince you. If you want to know when the car will be in your city, write us, and we will tell you

This offer is open to both Agents and Automobile Owners

Chadwick Engineering Works

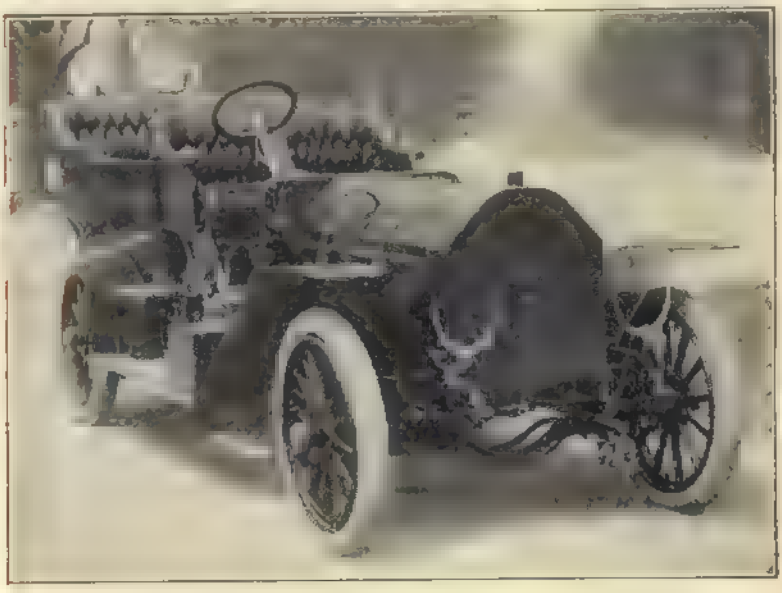
Spring Garden and 32nd Sts., Philadelphia

Our 1907 output is sold, and we are now delivering 1908 models of the

VICTORIOUS

Great Chadwick Six

On Decoration Day it flashed up Giant's Despair mountain at Wilkes-Barre, Pa., defeating all foreign and American touring cars by so great a margin as to stun competitors



6 cylinders, 5" bore and 6" stroke. Weight, exactly 3000 lbs.
Price, F. O. B., Philadelphia, $5,500.

WHAT WE HAVE AND HOW WE PROVE IT.

Twelve Claims with One Dozen Facts to Substantiate Them.

1. We have the most successful six cylinder touring car in the world
2. " " " " powerful
3. " fastest
4. strongest
5. " safest
6. " " " simplest high-powered touring car in the world.
7. " " " lightest
8. quietest
9. " " most easily-controlled high-powered touring car in the world
10. " dependable
11. [illegible] type
12. luxurious

On the next two pages are the facts to substantiate the above statements.

No. 1. It is the Most Successful

because it is the only high-powered six-cylinder car having a wheel-base as short as the representative, high-class four-cylinder cars, and therefore can be handled as readily on narrow roads and crowded streets. Passenger space has not been sacrificed, and the short wheel-base is obtained because of Chadwick motor construction, which admits of great power in compact space with all motor parts very accessible.

No. 2. It is the Most Powerful

because it has six cylinders, 5" x 6", and the weight is just 3,000 pounds

No. 3. It is the Fastest

First, because the motor is much more powerful, total car weight considered, than that of any touring automobile built regardless of price Second, because Chadwick chain housings and full system of imported ball bearings minimize loss of power between motor and driving wheels to an incomparable degree

No. 4. It is the Strongest

because the Chadwick design eliminates superfluous weight, and gives to the running gear that strength which is requisite for great power The weight being but 3,000 pounds, additional material does not have to be added to carry the car's own freight.

No. 5. It is the Safest

car because it is designed for rough, hard work over American roads. The material is absolutely the best obtainable, and the workmanship unsurpassed The axles are chrome nickel steel, drop forged in one piece The frame is of chrome nickel steel reinforced The springs are of the best oil-tempered Swedish steel, and the steering gear, one of the few which is really irreversible The brakes are quick, strong and efficient, and the control practically on one gear because of great power. There is fitted on the steering wheel a magneto switch, which, by pressing a button, will act as a brake and disconnect the power

No. 6. It is the Simplest High-Powered Touring Car

because of the mechanical refinement which eliminates all unnecessary parts, and so installs all necessary parts that they are easily accessible

No. 7. It is the Lightest High-Powered Touring Car

First, because of the Chadwick dual unit system of casting motors, which are completely enveloped in a copper water-jacket. Second, because of lower speed in transmission being actuated through one single chain of spur gears, thus permitting of short shafts, close bearing centres and hence a small unit. Third, because axles, frame, counter shaft and other vital parts are chrome nickel steel, which contributes materially to reducing weight.

No. 8. It is the Quietest High-Powered Touring Car

First, because of perfect valve action. Second, because of Chadwick's patented change speed system, which involves the use of only one chain of gears at one time, and last, but not least, the patented system of housing the driving chain with aluminum, oil tight cases, which are not disturbed for chain adjustment.

No. 9. It is the Most Easily Controlled

because you can go from zero to 70 miles on the high gear; because the enormous power plant of the Chadwick car develops sufficient power at extremely low motor speeds to enable operation on high gear under the most severe road conditions.

No. 10. It is the Most Dependable

car for the reasons above set forth, such as strength, safety, simplicity, lightness and easy control, together with the highest grade material obtainable and superior workmanship.

No. 11. It is the Most Advanced Type

because there is no car made in Europe or America to-day that possesses an equal number of points of merit. It is the most successful six-cylinder touring car; it is the most powerful, the fastest, the strongest, the safest, the simplest, the lightest, the quietest, the most easily controlled, the most dependable and of the most advanced type, consequently Chadwick construction incorporates more important, exclusive features than any three motor cars manufactured. There is nothing that approaches it. It is true it will be copied, but only when too late, as "Chadwick" is synonymous with originality and will therefore always lead.

No. 12. It is the Most Luxurious

because the body is made of aluminum and hickory. The upholstery is genuine French hand-buffed with satin finish leather. The body or carriage work and refinement of exterior in minute detail is the best money can procure.

The Great Chadwick Six

is the car which is being bought this year by the well informed and discriminating buyer whose experience enables him to recognize superior quality and who will have nothing but the best. Next year the GREAT CHADWICK SIX will be bought by the same class of buyers, plus the "follow-the-leaders." While it is better to be late than not at all, it is still better not to be at all late

Notwithstanding the fact that the demand for this already famous model is tremendous, we can make reasonably prompt deliveries, as we are early with our 1908 models

Remember, the GREAT CHADWICK SIX is not a racing car It is a comfortable, safe, practical touring car, having all the advantages of great speed, power, strength and mechanical refinement of detail of the best Vanderbilt Cup Racers, with the added advantages of comfort and luxury to be had only in the most expensive, high-class touring cars

We are soon to start on a tour through the United States with our original demonstrating car, which won the great touring car events in the Wilkes-Barre hill-climb, and are prepared to prove to you in your city, on your roads and hills that the GREAT CHADWICK SIX, in comparison with any other touring car made in any country in the world is all that we have claimed for it in this and our other advertisements.

If you are sufficiently interested to the extent of investigating, we can convince you If you want to know when the car will be in your city, write us, and we will tell you

Agencies in many of the large cities.

Chadwick Engineering Works

3207 Spring Garden St., Philadelphia

THE HOL-TAN AUTOMOBILE

1908 ANNOUNCEMENT

THE HOL-TAN Company, for many years sole importers of the FIAT cars in America, begs to announce that it will close out the remaining models of this make at greatly reduced prices and hereafter devote its entire energies to marketing the new **HOL-TAN** car.

In 1906 we became aware that some of the American cars were conforming closely to European standards in mechanical excellence and that the American demand was for a car of moderate horse power, cost and up-keep.

THE HOL-TAN AUTOMOBILE

THE HOL-TAN ROADSTER

We therefore reduced our importations of FIATS and requested Mr. Louis P. Mooers, the well known American engineer, to design for us a model to be known as The **HOL-TAN** Car, which should incorporate those principles and refinements which our experience had shown to be most satisfactory to our former customers.

After a year's work we are now able to offer to the public a satisfactory American car at the right price.

The **HOL-TAN** Car will be manufactured by the Moon Motor Car Co., of St. Louis in two models, differing as to chassis length, wheels and wheel base only.

The shorter car, known as **THE HOL-TAN STANDARD,** will be 110 inches wheel base, gauge 56 inches, motor 4-cylinder, 4½ x 4½ inches, 4-cycle water cooled with jump spark ignition from high tension magneto and a storage battery and coil.

THE HOL-TAN AUTOMOBILE

THE HOL-TAN STANDARD

The **HOL-TAN** rating is 25 H. P. but the A.L.A.M formula gives 32 H. P. There are four speeds forward and a reverse. The transmission is sliding gear Mooers selective type with bevelled gear to floating divided rear axle. Weight, with touring car body, is 2500 lbs. Price with full equipment $3000. On this chassis a touring car body will be supplied or a Roadster to carry two, three or four passengers. No bodies will be fitted to order on this chassis.

THE HOL-TAN SPECIAL will be 121 inches wheel base, giving room enough in the tonneau of the touring car to accommodate five passengers instead of three. Longer chassis also allows Limousine or Landaulet bodies to be fitted to order. For the regular open touring car body the price will be $3750. Chassis only $2750.

The **"HOL-TAN CAR"** for the season of 1908 embodies a number of features, the combination of which in a chassis places it a leader of of all new model designs.

THE HOL-TAN AUTOMOBILE

FEATURES

1—Simplicity of construction and accessibility to all parts—the first requisite toward chassis perfection.

2—Valves in the cylinder head have been lately adopted by most successful designers, as all valve action can be mechanically attained by the simplifying use of one half-time shaft.

3—Ignition by Bosch high tension magneto is the most approved ignition system now in general use.

4—The selective speed change gear system has stood the test of years and is still considered the most effective system. Four speeds and reverse

5—The drop frame permitting the use of full elliptic spring suspension over rear axle and low gravity center.

6—Absolute equalization of brake tension.

7—Fan in the flywheel eliminating the necessity of belt or gear driven fan back of radiator.

8 Cellular radiator Mounted well back of front axle.

9—Multiple disc clutch. 53 members, steel vs. steel.

10—Full floating type rear axle and direct or bevel gear drive.

SEND FOR
NEW CATALOGUE

THE HOL-TAN CO. NEW YORK CITY.
THE HOL-TAN CAR
MFG BY MOON MOTOR CAR CO ST LOUIS MO.

THE HOL-TAN CO.

Broadway and 56th St., New York

Hol-Tan Gasoline Cars

HUGH DOLNAR.

The Hol-Tan Company, New York City, will offer for the season of 1908 two, all new American models of motor cars, a seven-passenger, tonneau body, called the "Hol-Tan Special," together with a five-passenger touring car, the "Hol-Tan Standard." The standard chassis will also be fitted with two, three or four-passenger roadster bodies.

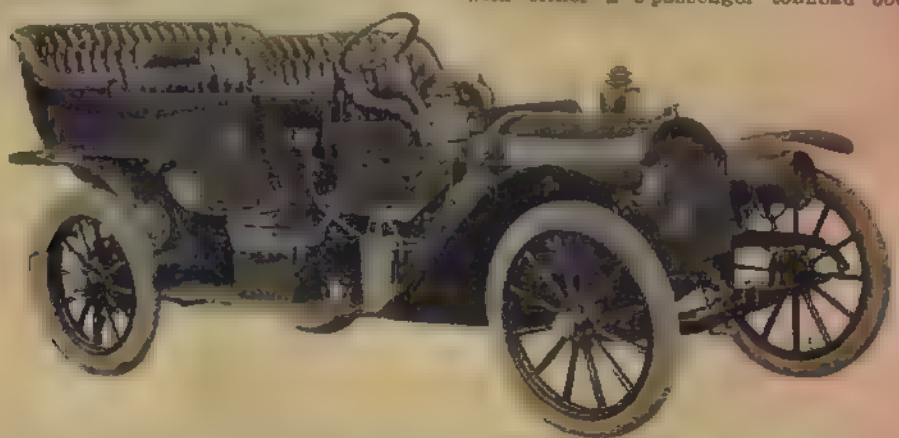


Fig. 1. Hol-Tan 1908 7-passenger touring car. Wheel base [illegible] inches, gage 56 inches, tires 36x3½ inches front, 36x4½ inches rear, sliding gear, four forward speeds and a reverse, Moores selective, with bevel gear to divided, floating rear-axles. Motor four 4½x4½ inch cylinders, 4-cycle, water-cooled. Hol-Tan rating 25 H. P., A. L. A. M. rating 32 H. P. "Regular" body as here shown, weight 2900 lbs. tanks filled. Price $3[illegible]0 including magneto ignition, five lamps, mats, horn and tools all ready for extended touring. Cape top extra. Limousine, landaulet, coupe or cab bodies fitted to order.

The Hol-Tan 1908 chassis, will for the present, be fitted with one motor only, four cylinders 4½x4½-inch, A. L. A. M. rating 32 H. P., altho the company call it 25 H. P. Two lengths of wheel base will be made, 121 inches with 36-inch tires, 3½-inch diameter front, and 4½ inches rear for the "Hol-Tan Special," fitted with 7-passenger tonneau and enclosed types of body, limousine, couple, landaulet, or cab as may be preferred. These bodies will all be supplied to special order by Locke, Quinby, or Demarest, of New York. A 110-inch wheel base chassis, tires 34x3½ inches front and 4½ inches rear, same motor, four cylinders, 4½x4½ inches, will be fitted with either a 5-passenger tonneau body, or a two, three or four-passenger roadster body. This line of 110-inch wheel base cars will be known as the "Hol-Tan Standard" and will be fitted with regular aluminum bodies, as shown in the illustrations herewith.

Fig. 2. Hol-Tan "Standard" 5-passenger touring car. Wheel base 110 inches; gage 56 inches, motor, four cylinders, 4½x4½ inches 4-cycle, water cooled; jump spark ignition, magneto and storage battery. Hol-Tan rating 25 H. P., A. L. A. M. rating, 32 H. P. Tires 34x3½ inches front, 34x4½ inches, rear. Four speeds forward and a reverse sliding gear, Moores selective type, with bevel gear to floating, divided rear axles. Standard aluminum body, as shown, to seat five passengers. Weight 2500 lbs. Price $3,000, including magneto ignition, five lamps mats, horn and tools, all ready for extended touring. Cape top extra. This 110-inch wheel base chassis and body are standard. No bodies fitted to order.

The price of the 1908 special chassis, 121-inch wheel base with 36-inch tires has

been fixt at $2750; with a regular tonneau body, seating seven passengers the price will be $3750. Where special bodies are ordered the purchaser pays a contract price as agreed upon.

The Hol-Tan Standard line prices will be $3000 for the 5-passenger tonneau body touring car, or for either style of roadster

States than any European car can possibly be, because every car suits its home roads, and the Continental roads are so greatly superior to what we dignify by the name of highways in America, that Continental cars do not meet our mud, sand and water-breaker conditions, no matter how well they may do on good macadam.

Fig. 3. Hol-Tan standard 110-inch chassis, fitted with standard aluminum roadster body to carry two, three or four passengers. Roadster weighs about 2300 lbs. Prices same as touring car, $3,000, with same double ignition and equipment.

body, all bodies of aluminum, standard forms, nothing in the way of special bodies being fitted to the standard chassis.

The Hol-Tan Company was formed in 1905 to continue the American exploitation of the "Fiat" cars, which was begun by the incorporators of the company in 1902,

There has never been any question as to the excellence of American machine designers or carriage builders, and this company, in its turn from foreign to home production, has selected a distinctly American car created by Mr. Louis P. Mooers, original designer of the Peerless car and

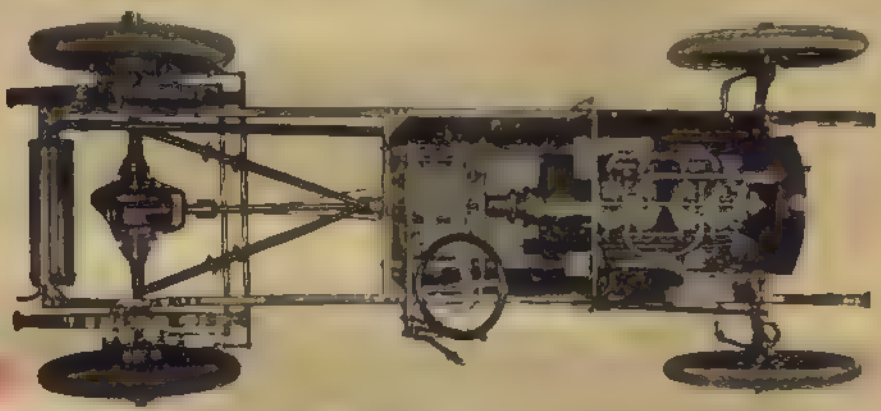


Fig. 4. Hol-Tan 1908 Mooers design chassis plan. This chassis is made with either 121 or 110-inch wheel-base, with 36 or 34-inch tires. Chassis general construction features same in both models. The motor and gear-box are set on a sub-frame. The chassis frame sides are parallel, no sidewise bends, but are raised 3½ inches over the rear axle. The rear axle and braces form a rigid triangle, globe-jointed forward to the chassis frame cross girt, to take the place of both struts and torsion arm. The sliding gear is Mooers selective type.

and has continued to handle the Fiat only up to the present time. The Fiat is ranked among the very best of European cars, and has given the Hol-Tan clientele entire satisfaction; but this company has now become convinced that American cars, designed especially to meet American road conditions, are better for use in the United

of the cars brought out by the Moon Motor Car Company, of St. Louis, Mo., which company has been for many years one of the best known Western carriage builders and has had an extended experience in vehicle construction, covering a period of some thirty years.

Fig. 5. Hol-Tan four-cylinder motor, in place in chassis. Left hand side, showing dual-unit cylinders, with vertical valves in the cylinder heads overhead cam-shaft, vertical shaft to cam-shaft and water-pump drive. Eight-lead, force-feed, single-plunger pump lubrication system at the right hand. Design by Louis P. Mooers.

AXLES.

The front axle is an I-beam section, steel drop forging. The front wheels and floating rear axles are on 2-point, adjustable ball bearings. The stub-axle steering arms extend to the rear. The rear axle is a steel casting gear housing, divided so as to permit removing the entire gear assembly. Spur balance gear is fitted. The steel tube axle sleeves are in rigid assembly with a steel tube triangle which terminates in a globe forward, and serves for

Fig. 6. Hol-Tan 4 cylinder motor, right side. 4½x4½ inch cylinders, A. L. A. M. rating 32 H. P. Mooers carburetor. Bosch magneto and storage battery ignition, with one spark plug only in each cylinder. High tension distributor in magneto. This 4-cylinder motor is Mooers design throuout, with overhead cam-shaft, water pump and magneto gear driven. Mechanical oiler pump only is belt-driven. No separate fan, vane-arms of the fly-wheel change the air in the hood.

both torsion resisting and driving wheel thrust to the chassis frame cross girt. The divided rear axle is of the full-floating type, the rear wheels being carried on ball bearings surrounding the outward ends of the axle sleeve-tubes. The floating axle shafts are on adjustable 2-point ball bearings.

STRUTS AND TORSION ARM

Neither struts nor torsion are fitted, the globe-end triangular rear axle structure resisting torsion and transmiting the driving effect to the chassis frame. This avoids the necessity for strut adjustment, and also avoids the inevitable discrepancy between spring movement and strut movement.

THE SPRINGS.

The front springs are half-elliptics, jointed in front and linked in the rear. The rear springs are full elliptics, scroll-head, revolubly mounted both on the rear axle and at the chassis frame brackets on top. The springs are all tongued and grooved and banded.

THE BRAKES.

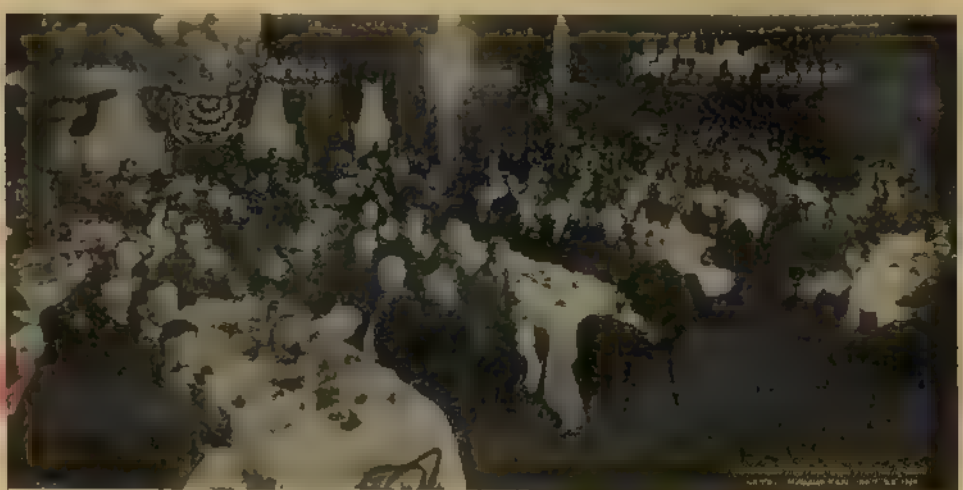
These are exterior and interior on and in the steel castings rear hub brake-drums, which are of ample diameter. The exterior brake band is Gandy belting faced and 3-hole lever applied. The inside shoes, also Gandy, belting faced, are jointed, and are toggle-expanded. The brake pull equalizers are Mooers 1908 design, full length steel tubes, reaching all the way across between the brake links, and having a universally jointed suspension from the rear axle tubular braces, so as to move with the rear axle vertical action without transferring motion to either pedal or hand lever. The whole brake action is perfectly equalized, perfectly free to follow the rear wheel lift and drop at either end, and is powerful, well designed and thoroly built.

THE CLUTCH.

The clutch is of the multiple disk type with a sufficient number of flat disks, no corrugations, to give a gradual engagement with a strong slipping drive and to transmit the maximum motor power with comparatively light spring pressure. This clutch it is claimed gives complete satisfaction, requires no attention and is very easily operated.

The steering action is the Gemmer, right and left screw threads, self locking, powerful and capable of adjustment to eliminate lost motion.

The spark and throttle levers are ratchet retained on top of the hand wheel, and an accelerator pedal is fitted which opens the throttle independently of the hand lever adjustment. There are two large pedals on the foot board. The left pedal releases the clutch only. The right pedal applies the exterior rear hub drum brake band. Of the two hand levers, that on the outside is pulled to apply the internal emergency brakes only. The inside lever works in three planes to shift the Mooers selective gear change.



Luncheon given by the American Motor Car Manufacturers' Association at the Hotel Manhattan on October 23th, 1907.

Andrew Redmond, driving a Columbia electric car, established a world's record for electric cars on circular tracks by making a mile in 2.02½. He also won the two mile event, covering the course in 4.08½.

The E. R. Thomas Motor Company has announced the appointment of Mr. E. C. Morse as commercial manager. Mr. Morse will be in full charge of all matters pertaining to the sale of the Thomas product and of the advertising.

The 1908 Peerless Models

The Peerless cars, made by the Peerless Motor Car Company, of Cleveland, Ohio, for the season of 1908 are higher powered, larger and roomier, but are characterized by few changes as compared with previous models, the principal changes being a larger wheel base, seven-passenger body, location of front axle further front, 36-inch wheels, flat springs and a double ignition system, including a magneto. A new 6-cylinder model has also been added. Three standard models will be marketed, Models 18, 15 and 20. The model 15 for 1908 will be precisely the same as the 1907 model 15. This seven-passenger car is rated as 45 horse-power. The motor has four cylinders cast in pairs with cylinder dimensions of 5½x5¾ inches. The wheel base is 119 inches, and the same double ignition system used on model 18 will be supplied with increased cylinder dimensions and the construction slightly changed to insure an easier and more certain removal of core sand. The cylinders are cast in pairs with offset intake and exhaust valves on opposite sides. The water-jacket plates are all made in copper instead of aluminum. The cylinders are carefully bored, reamed and ground, then lapped out with a special polishing preparation with piston and rings in place.

CRANK CASE

The crank case proper is a single aluminum casting, designed for strength and non-leakage of oil. Easy access to connecting rods and bearings is provided thru the bottom of the crank case by means of hand-hole plates. These plates are fitted with a deep recess or groove, into which the dirt and sediment from the oil deposits. By the removal of a plug from either end of this groove the sediment and dirty oil may be withdrawn, without the removal of the sod pan, so that it is easy to keep the motor well lubricated with clean oil.

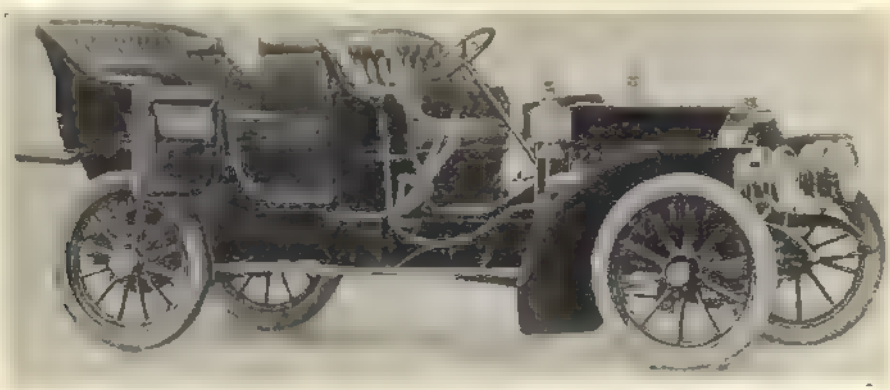


Fig. 1. Model 18 Peerless 30 H. P., seven-passenger touring car. Wheel base, 118 inches front axle further forward than last year, 36-inch wheels, flat springs and a double ignition system, including a magneto. A new six-cylinder model will also be marketed. For description see text.

It is furnished with a limousine body which is interchangeable with the standard touring body or with a roadster body which is not interchangeable, and which does not fit on the chassis used for the touring car. Thirty-six inch wheels, artillery type, with dished spokes are used, and are equipt with four-inch tires on the front wheels and 4½-inch on the rear.

Model 18 is a 4-cylinder, 30 H. P. car, the cylinders being 4⅞x5½ inches. The wheel base is 118 inches. The model 20 is an entirely new 6-cylinder creation for seven passengers. The cylinder dimensions are 4⅞x5½, and the A. L. A. M. rating gives 57 H. P. This car is fitted either as a touring car or a roadster, and sells for $6000. The same general construction will be used as on the other models. The wheel base is 133 inches and tread standard.

MOTOR.

The construction of the motor is along the same lines as the 1907 model 16, but

THE CRANK SHAFT

The crank shaft is a solid drop forging, specially treated, hardened and ground accurately to size. The front bearing is fitted with a stuffing-box to prevent leakage of oil. All gears, including half-time, pump and magneto gears, are housed in a compartment in front of the motor and run in oil. This not only minimizes wear, but prevents noise.

Both intake and exhaust valves are flat seated, mechanically operated and interchangeable. Made of a special alloy imported valve steel, the same as they have used for the past two years, and adjustable to take up all wear and to insure silent running after long use.

The pistons are oiled by means of oil pipes running to the cylinders from the lubricator, regulated by sight feeds on the

dash. Crank shaft, wrist pins, bearings, cam shafts, cams and all gears are oiled by splash from the crank case, which oil is replenished by tubes from the lubricator and regulated by sight feeds on the dash.

A float feed automatic carburetor is used. The throttle is controlled by hand lever on steering wheel, by foot accelerator pedal and by a governor. The Peerless governor maintains any desired rate of motor speed, practically irrespective of the load or grade.

IGNITION.

The ignition system includes the same coil, commutator and a single battery, as used on the 1907 cars. In addition to this, and entirely separate, is the Elsemann French type, low-tension magneto. All wires are connected with their terminals by a spring attachment, so that there are no thumb nuts to release. The wires can be detached and the magneto entirely removed in a very few minutes. The commutator, spark coil and battery may be removed from the car and there still remains a perfect magneto system of ignition, or the magneto may be taken off and there is still the battery system.

The method of wiring has been considerably improved by shortening the length of the wires.

The commutator is located on the right side of the motor on a level with the top and between the cylinders

The oiler has been improved, so as to cut down the number of oil pipes and connections, and is connected with the front and rear compartments of the crank case, so that by means of a two-way cock either compartment may be filled direct from the oil tank.

Water-circulation is by a gear driven gear-pump. The radiator is larger than the 1907 type, handsome in design and well built. The fan construction has been improved, is friction-driven by bevel gears from the half-time gears, and no belts or pulleys are used.

Radiator has been set back five inches, and is now directly over the front axle, and the same design will be used on the model 18.

CLUTCH AND CHANGE SPEED GEAR.

An internal expanding clutch which engages smoothly and is very light in weight is used. It is easily adjusted to compensate for wear, the only tool necessary being a screwdriver or a pair of pliers. The clutch can be taken out complete, without removal of sod pan or disturbing either motor or transmission, as a short removable shaft with two universal joints connects the clutch with the transmission.

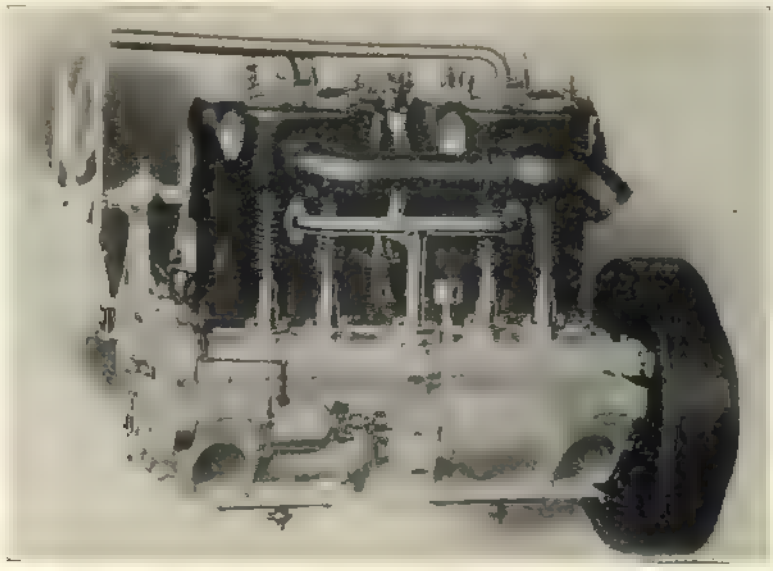


Fig 6. Model 18 Peerless 30 H. P. motor, exhaust side, showing the complete housing of the parts, the fan pedestal, location and driving of the water pump. Note the governor between the front gears and the pump.

The transmission is sliding gear, with four speeds forward and one reverse, and is improved in that the reversed gear is locked in its place by means of a cam. All gears are controlled by a single lever. Gears, shifting yokes and levers are all housed and run in oil. The shaft, on which the gears slide, is round, with four keys instead of square. Imported ball bearings of large diameter, oiled from the outside, instead of receiving their lubrication from the oil used in the gear case, which might contain metal particles injurious to the bearings, are used. All joints are carefully packed to prevent leakage of oil and grease. The aluminum casing is made in halves, with a large sized hand-hole on top for inspection of gears and for cleaning.

The power is transmitted to the rear

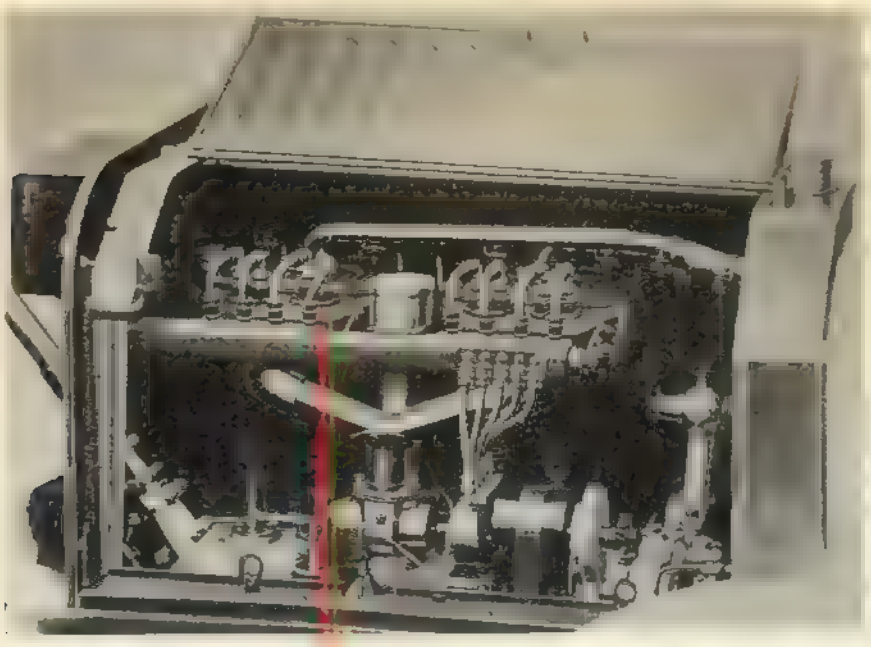


Fig. 3. Model 18 Peerless Motor, inlet side, showing the location of the armature and magneto and the unique method of housing and connecting the double system of wires.

axle by means of a propeller shaft, with universal joints at either end, housed in dust and weather proof cases and filled with lubricating grease. These joints are made without screw or nut to wear or

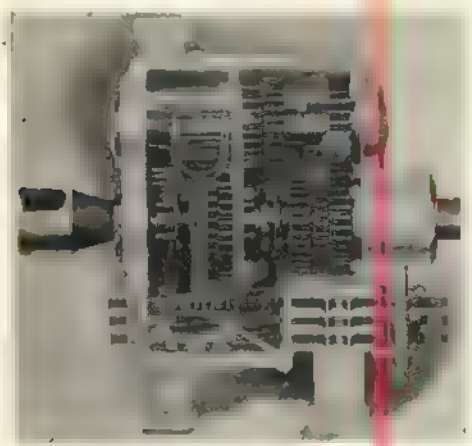


Fig. 4. New Peerless Change Gear, showing the swinging arm with the clash reverse gear at the end which when in place can be locked. The gears run in oil, but the annular ball bearings are specially lubricated with cleaned from outside.

become loosened. All driving parts of the rear axle have been increased in dimensions and are now made from imported silico-manganese steel stock which the company claims has been found to be more uniform in quality and much stronger than the alloy steels used on the 1907 models.

REAR AXLE CONSTRUCTION.

A live axle shaft operates in a 2½-inch tube, which supports the weight of the car. The bevel and differential gears are situated in the center of the axle, and housed in a grease packed cast steel casing. On each side of the driving gears and connecting with the live axle are universal joints, which take up all strain on the axle and prevent any binding of the gears. These universal joints in the live axle make a strong arched construction possible, and also permit dishing the rear wheels two degrees, the same as the front wheels. The wheels are carried on the stationary axle tubes on imported ball-bearings of extra large size. The main bearing for the pinion gear is of extra large size, and is easily taken out with the pinion complete.

Distance rods which take the driving stresses run from the frame to rear axle on either side and are adjustable by means of a turn-buckle, and a torque rod is used from the differential casing to a spring bracket, attached to a cross member of the frame.

The front axle is a solid one-piece drop forging of I-beam section, the spring saddles being forged integral with the axle. The center of the front axle is the lowest part of the car. The steering knuckles in the axle yokes are fitted with special imported ball bearings of large size and an improved oiling arrangement.

The steering gear is of the worm and sector type. The sector and shaft is a one piece soldid drop forging, the sector gear being a complete wheel is much

stronger and provides three times the wearing surface of the ordinary sector. The cross link between the steering knuckles has been placed behind the front axle, instead of in front, as in the 1907 models.

Adjustable bearings of imported design with ⅜-inch balls are placed above and below the sector. Two sets of brakes are fitted to the rear wheels. The internal brakes are 12½ inches in diameter of bronze, and the external contracting band brakes are 13 inches in diameter of camel's hair belting. The internal bands have 2½-inch face.

THE FRAME.

The drop trussed frame of cold rolled steel will be continued in use on all 1908 models. This feature was first used on model 15 of 1906. The dropping amounts to two and one-half inches, just in front of the rear axle, which carries the center of gravity of the car and load nearer the ground, without interfering with the road clearance and brings the whole driving mechanism in alignment.

The springs are made by Lemoine of France of silico-manganese steel. Both the front and rear platform springs are longer and flatter than those used on the 1907 models. The front are 40 inches by 2 inches wide, the side rear springs are 48½ inches by 2¼ inches, and the rear cross spring is 38½ inches by 2¼ inches. All springs are banded and the spring eyes are bushed and fitted with oil cups.

Thirty-six inch wheels, artillery type, with dished spokes, are used, both front and rear. Four-inch clincher tires are used on the front wheels and four and one-half inch on the rear, and the fender design has been slightly changed to afford greater protection to the car and its occupants.

The body is of the king of Belgium type, the rear seat being wider and the tonneau longer and more spacious than last year. The standard body is built to carry seven people comfortably. Small seats of folding type are used, which are practical and comfortable. These may be folded against the side when not required for use and are easily removable when it is desired to use the car for five passengers only.

The standard color will be maroon with light red running gear, altho other color combinations will be furnished when ordered

MODEL 18.

Frame—Length of frame over all, 155½ in.; length of sub-frame, 79⅜ in.; length back of dash to end of side channel, 100 in.; length forward to dash to end of side channel, 35½ in.; height from ground to top of frame, 25 in.; thickness of frame steel, 8 U. S. S. Gauge, 11-64 in.; depth of side channel, 4½ in.; wheel base, 118 in.; clearance flywheel, 10 in.

Motor—Number of cylinders, 4; bore, 4⅛ in.; stroke, 5½ in.; valve action, mechanical; number piston rings, 4; order of firing, 1, 2, 4, 3; type of clutch, internal expanding ring; width of leather on clutch face, 3 in.; diameter of clutch drum on flywheel, 12 in.

Brakes—Number of brakes, four—2 external—2 internal; diameter of internal brake band, 12½ in. bronze; diameter of external brake band, 13 in. camel's hair; width of face internal brake band, 2½ in.

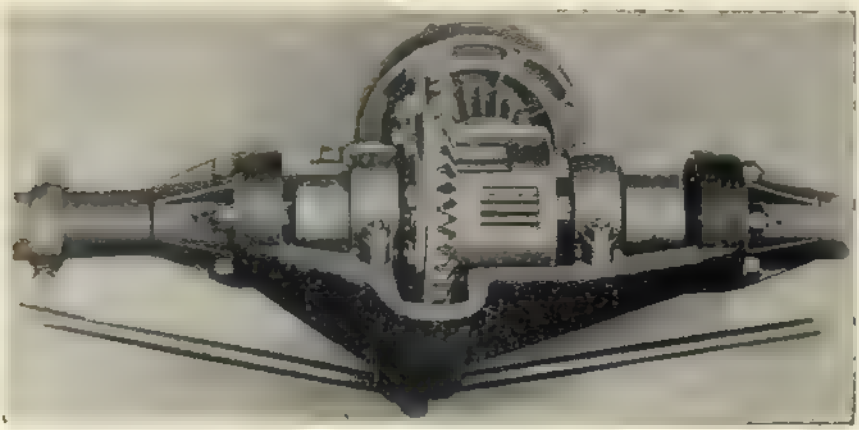


Fig. 5. Model 18 Peerless Rear Axle and Differential. On each side of the differential connected to the driving shafts are universal joints which prevent any binding and allow an [illegible] rear axle housing which is very strong and also the dishing of the rear wheels two degrees, the same as the front wheels. Imported annular ball bearings of large size are used, the pinion gear and its large bearing are arranged to be removed together. The axle is further strengthened by a turnbuckled truss rod

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Warner Gear Company, of Muncie, Ind., announces that it is adding a two-story 144x155 feet addition to its plant.

Mr. R. B. Jackson has been appointed general manager of the E. R. Thomas Motor Company.

1908 DELIVERY CAR

MODEL D. C., 4 H. P., $550; 8 H. P. $650

Fitchburg, Mass., Sept. 25, 1907.

WALTHAM MANUFACTURING CO.,
Waltham, Mass.

Gentlemen:

Perhaps you may care to hear of a trip that I made July 4th to demonstrate the good qualities of my Delivery Car—Model DC 4-H.P.

There is a young man here who has been talking of buying one to use on a poultry farm. He had called upon me twice and I had called on him some six or eight times, and I felt very sure that if I could make a good demonstration, I could make a sale, so I agreed to meet him at ten o'clock, July 4th, and we would go up to his farm which is about eight miles out from the city. I met him as agreed, and as he had a friend with him I had nearly 200 pounds extra load. The combined weight of us three was 645 pounds. For the first five miles I was well acquainted with the road, then we turned on to a road that I had never been over and for three miles I drove my car over the roughest and worst road that I ever want to see. There were places where grass had covered the entire width of the road and other places where one side was washed out, there were deep gullies across the road, there were places where the brush was so close that the fenders on each side of car would hit. It was a steady ascent with no very steep grades but one that called for very careful driving.

At last I caught a glimpse of a house through the trees and began to feel better, but just before we reached the house there was a sharp turn in the road and all that we had passed was but play to what was before us.

We were at the foot of a hill some five rods long, covered with small pebbles and it was the steepest grade that I ever remember riding over, either with team or auto. But my faith in the little motor was strong and I started, about one-third of the way up I thought what if something should break. I would be in a fix—so I stopped and asked one man to get off and walk behind with a big rail to block the wheels in case of an accident to brake or power. But nothing happened and we reached the top in safety, and I want to say right here that I made a standing start on the steep hill and reached the top as quick—if not a good deal quicker—than a horse could, and the friction transmission did not slip.

That was the worst hill on the trip for the rest was easy. I stopped and waited for the man to come up, looked the machine all over, oiled up, and soon reached our destination.

When we were ready to return I asked if there was another road home. He said "Oh, yes, go about half a mile and we would have State Road all the way home.

I have run my car over 3000 miles and the friction is in fine condition yet. All the trouble I have had has been in the tires. Nails and glass bottles are bad for rubber.

Yours very truly,
W. A. YALE.

Write for information and illustrations of all 1908 Models
Discounts quoted dealers in unassigned territory

Waltham Manufacturing Company
WALTHAM, MASS., U. S. A.

NEW YORK BRANCH
1615 Broadway

CHICAGO DEPOT
433 Wabash Ave.

BOSTON SALESROOM
64 Huntington Ave.

Members of Ass'n Licensed Auto. Mfrs.

The Hewitt 5-Ton Motor Truck

The Hewitt Motor Company, 6-8-10 East Thirty-first street, New York City, has recently completed its 5-ton truck, a detailed description of which is given herewith. The illustrations show the truck chassis fitted with a side delivery coal body; a detail view of the radiator suspension, and a detail view of the spring and sprocket construction.

The weight of the truck unloaded is about 7000 pounds. It is built to carry five tons, and is said to be able to start off on the high speed on a reasonable roadway with seven tons load, also to ascend grades as high as 10 per cent. with ease, and to run up grades of 5 or 6 per cent. on the high gear at the rate of 8 miles per hour. It is here shown with a load of over 6 tons. Solid Firestone tires

The frame is made of prest steel 9 inches deep, and is similar in construction to the best modern railway freight cars. The three units of the power plant, consisting of the counter-shaft, the gear box and the motor, are entirely separate from each other, and are connected by universal joints, one between the motor and gear and one between the gear and the counter-shaft, so that the whole frame may go out of line and not injure the power transmission in any way. Each of these units is bolted separately to the frame, and can be removed quickly and easily, thus facilitating repairing and assembling.

The bevel gear drive and differential on the counter-shaft are built as a separate unit, and made of the best nickel steel,

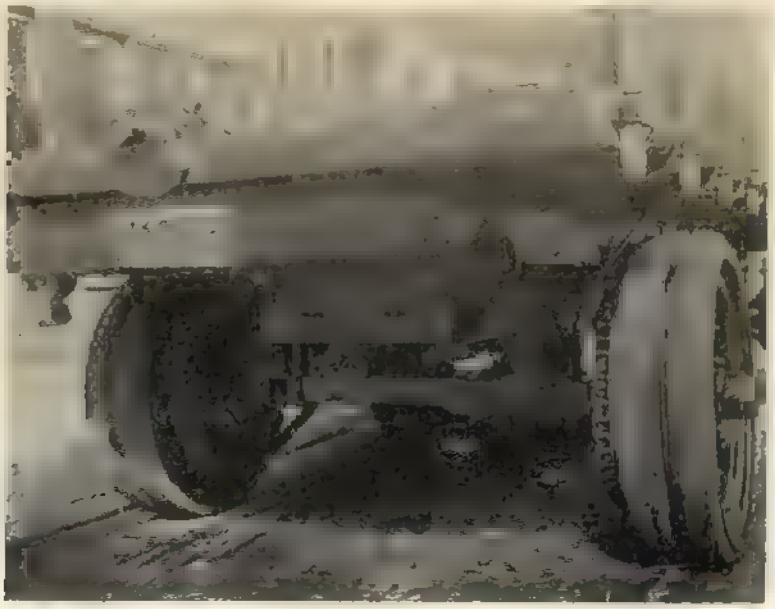
Hewitt 5-ton truck chassis fitted with a side delivery coal body. The weight is carrying is a few hundred pounds over six tons. The motor is the push here. Motor is 4 cylinders, wheel base, 158 inches; gage 68 inches, front tires, 5x36 inches, solid Firestone and rear tires 4x36 inch twin; prest steel frame 9 inches deep; planetary transmission; drive chain drive, 80 gallons gasoline capacity, internal expanding brakes on rear hubs and a differential

are used, 4x36 inches double on the rear wheels, and 5x36 inch single tires on the front wheels. The wheels are of best grade hickory, and the drive is by large roller chains carried out near the rims, the 24 inch sprockets being bolted thru every spoke. The brakes are of the internal expanding type, and are the largest that can be gotten on the wheels, approaching as near the ground as it is safe to have them. The axles are very large and of the highest grade materials. Timken roller bearings are used thruout on the wheels, and the bearings for the rear wheels have been made of extra large size, especially for this truck. The springs are made rather flat, 4 inches wide, in order to make the truck easy riding.

hardened This assemblage is of enormous size for the work it is designed to perform. It is mounted on Timken roller bearings of large size, and the design is intended to be permanent, requiring no attention

The gear box is of the planetary type, with nickel steel gears and shaft. Band clutches, fiber-faced, and the high speed clutch of the push-in, cone type, held in position by a plate, which acts upon a set of springs, give only the necessary pressure to drive the car, and will never cause the clutch to grip suddenly, as the whole is continuously oiled from the pump. The changes of speed, two speeds forward and reverse, are controlled by three pedals, which are interlocked in such a way that when one is pushed in,

the other is automatically thrown out of engagement. The hand brake is also interlocked with the pedals, so that in an emergency the sudden application of this brake will throw out any speed which is engaged.



Rear view of the Hewitt 5-Ton Truck, showing spring and sprocket construction.

The motor is a four-cylinder, 4¼-inch bore by 5½-inch stroke, and develops 30 to 35 horse-power, which figures out to 28 horse-power, according to the A. L. A. M. formulæ. The motor is of entirely new design, built expressly for this truck. The connecting rods and pistons are very long, giving a low angle of pressure on the pistons in order to secure long wear. The pistons can be removed from the cylinders without dismantling the engine simply by opening doors in the side of the crank case, disconnecting and taking them out. This allows of new rings being put on or new crosshead pins being inserted without a complete overhaul of the car. This feature is a great advance in commercial work, where the car can never be laid up for many days at a time. The cam shaft is in one piece of nickel steel. The crank shaft is of nickel steel, of over 160,000 pounds tensile strength. The water jackets of the cylinders are amply large, and the flat-seated valves are much larger than is usual in automobile practice. The Sims Bosch high tension magneto is used. The spark plugs are placed in the inlet valve cap so as to be out of the reach of oil.

The oiling is automatic, by means of a force-feed oil pump composed of a series of small gear pumps, geared directly on the cam shaft. The oil piping is of steel, to avoid breakage. The oil tank is heated so that the oiling will be the same summer and winter.

The Livingston cellular type radiator is employed. In order to prevent the radiator from being injured by excessive vibrations on bad roads when the truck is unloaded, a new patented system of suspending the radiator has been adopted on these trucks. The radiator is set in a steel case, surrounded by felt, and the steel case itself is suspended on springs

Front view of the Hewitt Truck Radiator showing patented method of suspension.

so as to reduce the amount of jar. The connections to the motor are made by means of a rubber hose. The arrangement is such that the radiator may be removed from the car in a few minutes, and another substituted, in case of damage by collision or other accident.

The steering gear is of the rack-and-pinion type, of ample proportions

Any form of body may be mounted on this truck, or it can be used as a passenger vehicle, carrying about 36 persons.

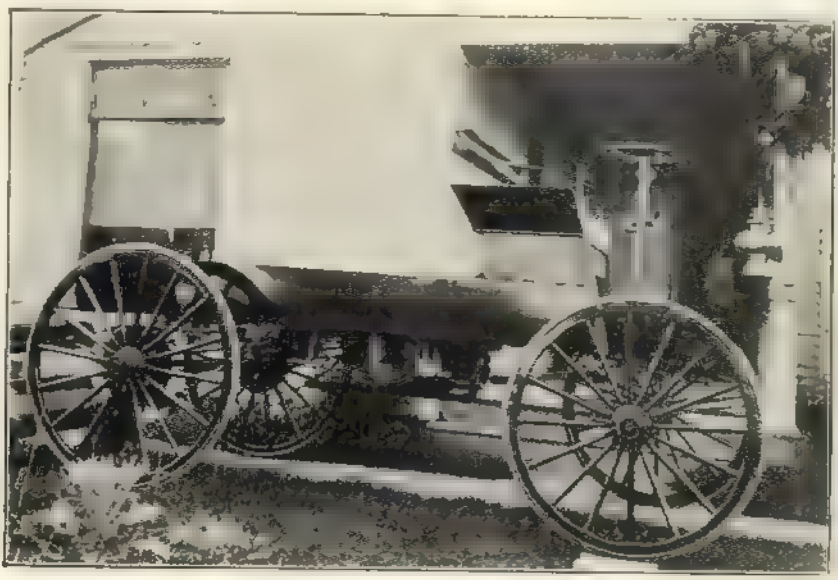
The truck is geared for a speed of eight miles an hour at 1000 revolutions of the motor. This is the economical speed of operation. The maximum speed when light would be at least fifteen miles an hour

The manufacturers advise us that one of these trucks recently carried a load of 5 tons of oil in barrels from New York to Philadelphia, making an average speed of 14 miles per hour, and required no attention in the way of repairs or unusual adjustments.

The "Van" Motor Wagon

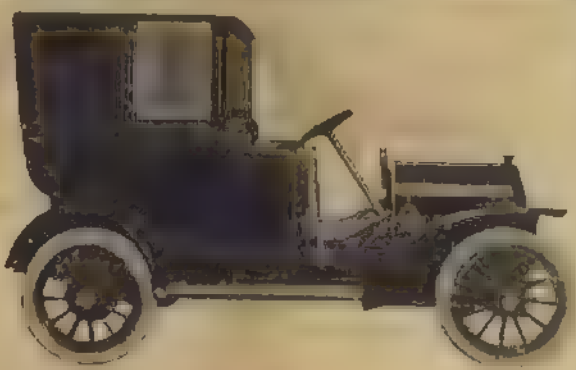
A practical, economical motor wagon, built to meet the demands of the business man, farmer, etc., has recently been placed on the market by H. G. V. Wambeke & Sons, Elgin, Ill. The special features of the motor wagon are that it is light and compact, and that it is suitable for any kind of light delivery, the high wheels and solid tires fitting it especially for town and country roads.

The motor used is a 4-cycle, double opposed, air cooled. The cylinders are 4⅜ bore by 4 inch stroke. The spark and throttle are controlled by stationary levers on top of the steering post. Ignition is by jump spark, a Splitdorf coil being employed. A planetary transmission is used, giving two speeds forward and one reverse, and running in an oil tight case. The clutch is of the self-adjusting, cone type. The frame is 5-16 by 1¾ angle steel. Full elliptic springs are used, 36x1½ inches, four leaves in front, and 38x1½ inches, five leaves in the rear. The drive is by ½ by 1 5-16 Baldwin Block Chain to the rear wheels. Two brakes are provided, one acting on the transmission and the other on the rear wheels. The axles are 1¼ inches in diameter, and fitted with Timken roller bearings. Solid rubber, 1¼-inch tires are used and are mounted on 36 and 40 inch wood wheels fitted with 1⅜-inch spokes. The wheel base is 92 inches, and the gage standard steering is by Brown & Lipe Self-Locking Gear. Gasoline capacity is 10 gallons. The body is 10 feet 4 inches long, by 36 inches wide, and is fitted with two seats. The road clearance is 18 inches. The wagon is geared for a speed of from 4 to 12 miles per hour. The upholstering is in full leather stuffed with hair on spiral springs. The price is $750, f. o. b. Elgin, Illinois



The "Van" Motor Wagon, 12 H. P. air-cooled motor, planetary transmission two speeds forward one reverse cone clutch full elliptic springs 1½-inch solid rubber tires on 36 and 40 inch wheels, 92-inch wheel base, standard gage, weight 1200 pounds. Price, $750

Garford



IF a Parliament could be called of all the expert automobile builders in the world to vote on the detailed specifications for an orthodox gasolene car, we believe that the composite of their judgment would be an exact duplicate of the Garford.

Some would quarrel with the majority on one detail, some on another.

But a Garford car would be the net result.

The Garford avoids "original" features. There is probably nothing in the car which is not in the majority of other successful cars all over the world.

ADDRESS

Eastern Inquiries: GARFORD MOTOR CAR CO. OF N. Y.
No. 1540 BROADWAY, NEW YORK CITY

Western Inquiries: GARFORD MOTOR CAR CO. OF CLEVELAND
No. 1372 EAST 12TH STREET, CLEVELAND

The 1908 Two-Cycle Atlas Car

The Atlas Motor Car Co., of Springfield, Mass., formerly the Knox Motor Truck Co., are placing on the market for 1908 a complete line of Atlas two-cycle cars. The success of the Atlas runabout described in our July, 1907, issue, page 81, was the basis for the present increase in their line of cars. The two-cylinder vertical, two-cycle runabout with practically only five moving parts in the motor is carried over for 1908, without change. The only improvement in this small machine is the use of a little higher compression, and the introduction of a two-speed planetary transmission of the company's own make. The gears in this transmission are case hardened, and all the bearings and studs are ground. A multiple disc clutch is also used in the 1908 Model "M." The Atlas engine can be put in any desired number of units, and the double folding rumble seated runabout for 1908 is provided with three cylinders, as shown in the accompanying photograph of the engine, and will carry from two to four passengers. The extreme simplicity of this motor, which gives the uniform torque of a six cylinder engine, is very apparent. Thermo-syphon circulation, the connecting pipes being aluminum and of graded diameter, is used. The piping system has ample area, and in fact the pipes are about the largest yet shown in automobile work. Of course, no pump is used. A vertical flanged tube radiator is employed.

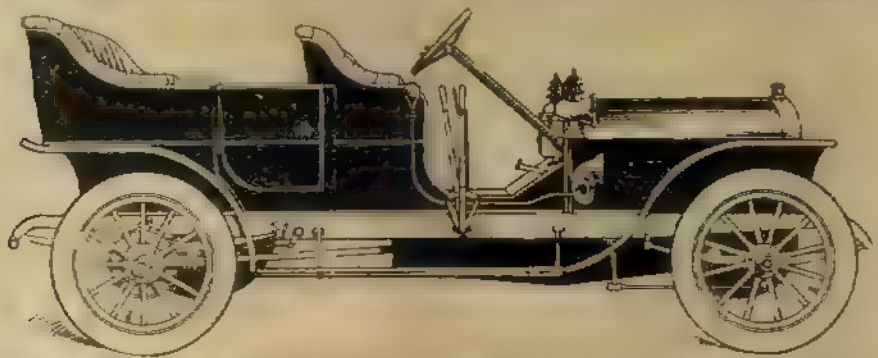


Fig. 1. The 1908 four cylinder Model "E" two cycle Atlas car. This new model has an aluminum body arranged to seat five, a four-cylinder two-cycle motor, 4½x4½ inches with cut a valve or gear of any kind the timer being on the main shaft of the engine cooling is by thermo-syphon circulation so that no pump is required; jump spark ignition is used current being supplied by storage or dry cells the motor is rated as 40 H. P., but it is claimed will actually develop over 46. The clutch is of the cone type, drive is by shaft, and a three speed sliding change speed gear operated on the selective principle is used. The wheel base is 114 inches, gage standard, and both the front and rear wheels are fitted with 34x4-inch tires. The wheels are mounted on roller bearings and the change speed gear on Hess-Bright bearings. The car with complete equipment sells for $2400.

Fig. 2. Right side of the Atlas three-cylinder two-cycle water-cooled motor. This motor is without valves, cam shafts, gears or water pump, as thermo-syphon circulation is used. The cylinders are 4½x4½, and the motor is rated at 34 H. P. Force feed lubrication for the cylinders and main bearings is used. Note the large size and the gradual increase in diameter of the water pipes to and from the motor. A vertical flanged tube radiator is used.

This car has 106-inch wheel base, 34x3½

Fig. 1. Left side of the three-cylinder, two-cycle Atlas motor. In this view the well arranged exhaust manifold which receives the spent gases from an annular exhaust chamber surrounding the lower portion of each cylinder is shown. A complete description of the two-cycle principle as used in the Atlas motor was given in our July, 1907, issue, page 81.

inch tires, and the motor is rated at 34 H. P. It is claimed to be capable of 50 miles per hour and sells for $1900. The small two-cylinder car is 90 inches wheel base, with 30x3½ inches tires, and is rated as 22 H. P., and sells for $1400, the same as in 1907. A large four-cylinder model, the engine being built up of the same cylinder units, is the latest addition to the Atlas line. The cylinders are 4½x4½, and the motor is rated at 40 H. P. The car is known as Model "E," and sells for $2400. The wheel base is 114 inches and the gage standard; the front and rear wheels are fitted with 34x4-inch tires; semi-elliptic springs are used all around, and ignition is by jump spark, current being supplied by dry batteries or storage batteries. All of the cars are shaft driven, the small runabout having a planetary gear, while the two larger models are provided with sliding, change speed gears, operated on the selective principle, and giving three speeds forward and one reverse. All of the motors are provided with bronze crank shaft bearings, and the wheels are fitted with roller bearings, while the transmissions are all mounted on Hess-Bright annular ball bearings. The general arrangement other than the engine of this four-cylinder, two-cycle car follow what has been accepted as good practice. The bodies of all three cars are of aluminum, and all the material and workmanship are claimed to be strictly high grade thruout.

The Long Island Parkway

At the recent dinner held in New York City, during show week, by the Flat Tire Club of New York, Mr. A. R. Pardington gave out interesting facts regarding the Long Island Parkway. According to Mr. Pardington thirty-two miles straight away have been secured and surveyed, and will be constructed at once. The balance of the sixty miles is practically secured nine miles in one stretch and eleven in another, having been obtained. The Parkway Commission has already let contracts for the office building at Mineola.

Stock Touring Car Race Postponed

The great international road race for stock touring cars, the first to be held in this country, has been postponed by its promoters until next April. This is well, however, because the season is pretty far advanced, and the early coming of the shows found our makers busy preparing them. Besides that, it takes a long time to get out entry blanks and arrange all the necessary details of the planning and final execution of a great road race.

The race will be promoted, it is said, by the Metropolitan Automobile Association of New York, aided and abetted by men who write the automobile copy for the great metropolitan dailies and such prominent men as Robert Lee Morrell, Job E. Hedges and others will act as committee chairmen.

The Chicago Automobile Club is keeping open house during show week in that city

The California State Automobile Association has been organized with headquarters in San Francisco, and will become affiliated with the American Automobile Association.

MOLINE

THE "MOLINE" for 1908 is attractive to every one interested in the purchase of automobiles. Each machine of the line is a distinct leader in its respective class. Last season's MOLINE cars are giving their owners absolute satisfaction. The 1908 cars are the same general styles, with such changes made as have been proven to be absolute improvements. The MOLINE policy is to build cars that will give satisfactory service, and not simply to bring out a new Model for each season's Show.

Model "A", Four Cylinder, 35 Horse Power, 5 Passenger, $2500.00
Model "S", Four Cylinder, 24 Horse Power, 5 Passenger, $2000.00
Model "H", Two Cylinder, 20 Horse Power, 5 Passenger, $1250.00

Model "A" is an extremely well proportioned, high powered touring car. The wheel base is 110", the tires are 34"x4", the motor develops good liberal 35 H. P., the springs are exceptionally well proportioned, making the car easy riding, and the painting, upholstering and general lines of the car are high class in every particular. It is a car well worth $500 more than the price asked.

Model "S" is a medium powered five passenger touring car. It is the half between cars. It is distinctly the machine for the man who wants something better than a two cylinder rig, and yet who does not want to pay the price of a high powered car. It is truly an every day car for the whole family. It has plenty of power for the weight, and weight enough to insure strength to carry five passengers.

Model "H" is positively the best value in the two cylinder car market. It is the result of five years of two cylinder car building. It is a larger car and more powerful than any of the earlier MOLINE two cylinder cars. The past season's use has proven it absolutely reliable in every way. Every one that goes out sells another. The success of this particular Model has been phenomenal. It is without doubt absolutely the best value in the market at the price.

All three styles of MOLINE cars are on exhibition at the Chicago Show, beginning November 30th.

Catalogue giving cuts and full particulars on request.

Moline Automobile Company
East Moline, :: :: Illinois
Member American Motor Car Manufacturers' Association

Patented Features Which Contribute Toward Making

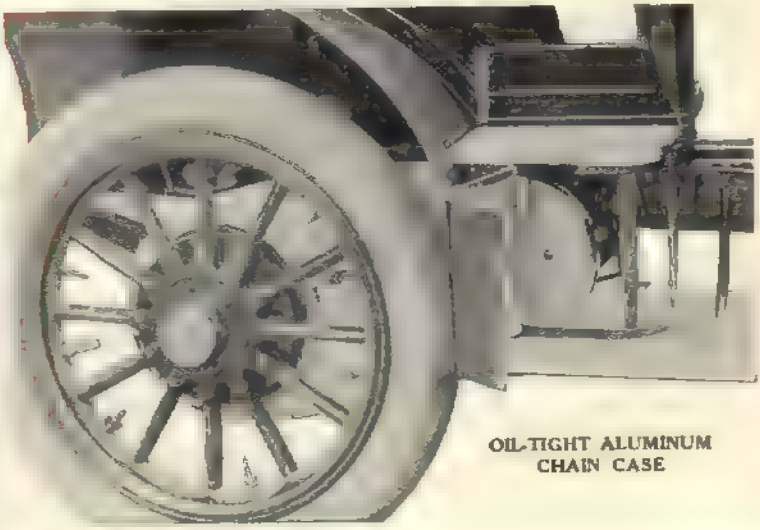
The 1908

Great Chadwick Six

THE MOST PERFECT AUTOMOBILE

Representative manufacturers and experienced users of motor cars appreciate the advisability of the double chain driving system over that of the shaft, in large, high-powered cars.

We have absolutely eliminated chain noise in our construction illustrated, so that the **GREAT CHADWICK SIX** is the only chain drive car made wherein the silence of the shaft and the very necessary flexibility of the chain system is secured. Adjustment of chains is accomplished without in any way disturbing their oil tight cases.



OIL-TIGHT ALUMINUM CHAIN CASE

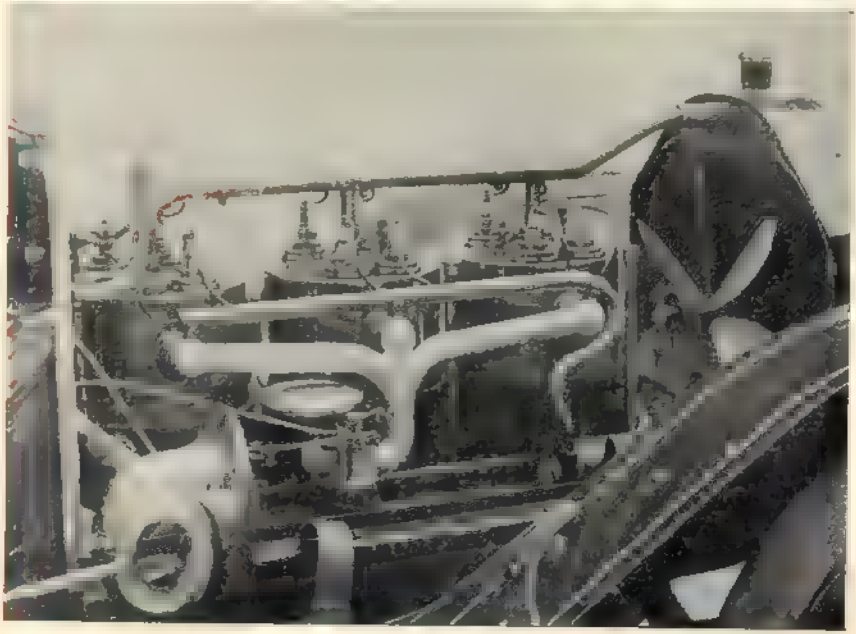
Features of The Great Chadwick Six

Steering,—The steering gear used in Chadwick cars is not only irreversible, but is so far as we know, the only one made where all lost motion or wear can be readily and simply adjusted.

Chadwick Motors Never Overheat

The cylinders are cast in pairs, each pair being enveloped in a copper water jacket which provides for a circulation of water in continual contact with the cylinders, which in volume is about six times that obtained by other methods.

This system of cooling obviates heating of valves and their stems, hence the necessity of grinding valves is greatly minimized. Heating to the point of pre-ignition is an impossibility with our motors.



Great Chadwick Six

Carburetor

We claim our patented carburetor to be the only one in existence which will furnish absolutely perfect proportions of air and gasoline at every variation of motor speed. An adjustment from the dash will instantly control for any altitude or climate condition,—any further adjustment is never necessary.

Complicated multiple jet carburetors have in small measure approached this perfect Chadwick feature, which in its simply contrived operation gives the effect of a distinct and perfect carburetor for every variation of the motor speed and gas volume.

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THE FUEL TANK

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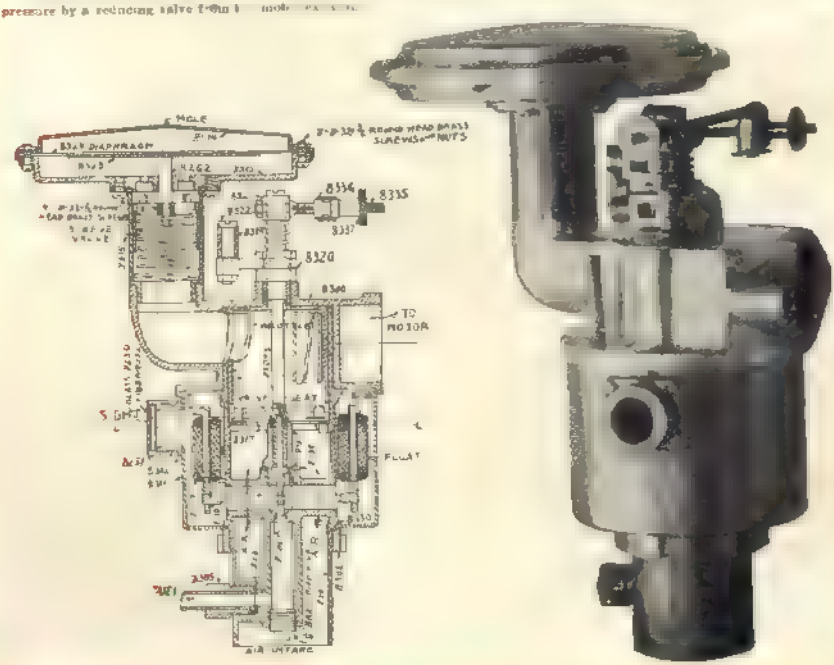


CHADWICK TOURABOUT. Six Cylinders, 5 ' x 6", $5500, F. O. B. Philadelphia.

The

Great Chadwick Six

With exception of crank shaft bearings, which are Plastic bronze of extremely liberal dimensions, all other bearings thruout our construction are German D. W. F. imported by the Hess Bright Manufacturing Company—

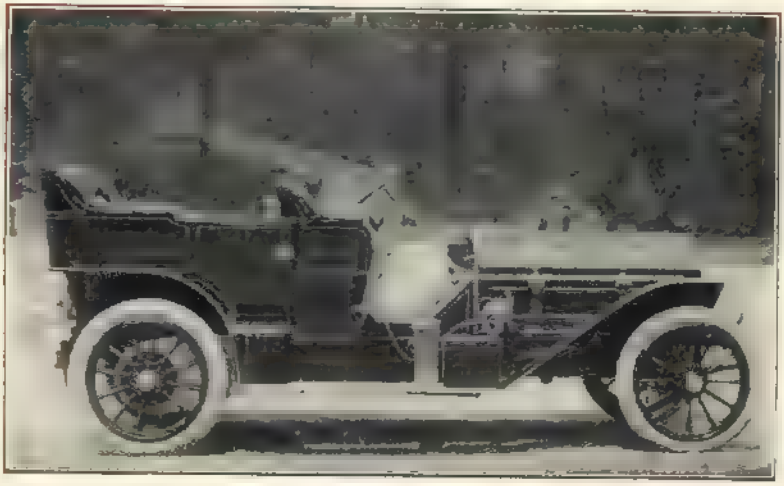
REALLY CHROME NICKEL STEEL

Many manufacturers claim chrome nickel thruout. We don't, for we know that differently treated steels are more desirable in certain parts of the car. We do, however, guarantee that Chadwick Frames are chrome nickel—that Chadwick Axles are of this same metal **drop forged in one piece,** as well as all shafts and transmission gears and numerous other parts.—The crank shaft is cut out of a solid square billet of steel.

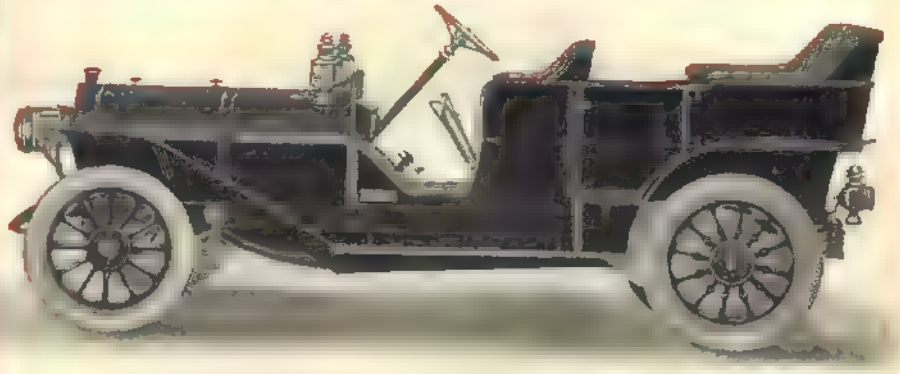
CHADWICK ENGINEERING WORKS, Philadelphia, Pa.

22nd. & Spring Garden Streets.

Agencies in the large cities.



CHADWICK TOURING CAR. Six Cylinders, 5" x 6", $5500, F. O. B. Philadelphia.



Price, $5500 F. O. B. Philadelphia

The Great Chadwick SIX

opens a new field of motoring pleasure for the automobile enthusiast, because it's the only gasoline car in the world having enough power to meet all conditions. Why? Because the engine has 6 cylinders 5x6 inches and the car weighs but 3000 pounds.

(For details see three following pages.)

The Great Chadwick Six

SPECIFICATIONS

MOTOR:	Six cylinders, 5″ bore and 6″ stroke, copper jacketed in pair.
TRANSMISSION:	Selective mounted on D. W. F. imported ball bearings, four forward speeds and reverse actuated by single control lever.
WHEEL BASE:	124″, Tread 56″
SPRINGS:	Semi elliptic front, platform rear, made from imported oil tempered steel.
FRAME:	Chrome nickel steel, bottle neck type fitted in with hickory.
AXLES:	Chrome nickel steel of "I" section pattern, drop forged in one piece.
DRIVE:	Double chains enclosed in oil tight aluminum cases, readily adjusted.
BRAKES:	Foot brake, bronze shoes with cork inserts on large drum located on jack shaft. Emergency brake, pull hand lever to rear wheels, internal expanding dust proof system of very liberal dimensions, shoes are of bronze with cork inserts.
COOLING:	Water. Capacity 5 gallons circulated by [illegible] pump.
IGNITION:	Two complete systems, magneto and battery. (Switch Bosch Magneto, high tension. Imported coil and high tension Distributer on battery system.)
GEAR RATIO:	Fourth speed, 1 3/4 to 1; third speed, [illegible] to 1, second speed, 3 1/2 to 1; first speed, [illegible] to 1.
BODY:	Aluminum. Seats seven comfortably.
UPHOLSTERY:	Best hand buffed leather, genuine hair filled.
COLOR:	Carmine or Brewster Green. Special colors extra.
TIRES:	Standard Continental
WHEELS:	34″ x 4″ front, 36″ x 5″ rear.
EQUIPMENT.	Two searchlights, Prest-o-lite Gas Tank, standard side oil lamps, rear signal, tools, jack, pump, and horn.
TOP:	Extra.

GUARANTEE SPECIAL,—not for 30, 60 or 90 days only, but a moral as well as a business guarantee. As a responsible manufacturer, we feel that our cars, which are sold as perfect in material and workmanship, must be perfect. If not, we are prepared to make good any imperfections within any reasonable time.

Altho the **Great** *Chadwick* **SIX** is the most powerful touring car made in America, it is one of the lightest, strongest, easiest-running and most easily adjusted automobiles ever offered to the public. Great power is obtained without sacrificing strength, because of the superior design and construction of the motor and transmission, which are powerful without being heavy. The saving of weight in these parts permits of an exceptionally strong running gear. The frame and axles are of chrome nickel steel, and D. W. F. Ball Bearings,—imported by the Hess Bright Ball Bearing Co.,—are used throughout.

The **Great** *Chadwick* **SIX** will cover more miles with less repairs and adjustments than any high-powered automobile made in the world. A broad guarantee is back of this statement.

Chadwick Engineering Works

Successor to Fairmount Engineering Works

Spring Garden and 32nd Sts., PHILADELPHIA, U. S. A.

SALES OFFICE

3205 Spring Garden Street

PHILADELPHIA

Agents for New York City and Metropolitan district, Sidney B. Bowman Automobile Co., 225-227-239 241 W. 49th St.
Pittsburgh, Pa., Atlas Automobile Co., College and Ellsworth Aves.
Troy, N. Y., Troy Carriage Works.
Albany, N.Y., Troy Carriage Works.
Boston, Mass., Curtis-Hawkins Co. Motor Mart, Park Square.

A few brief facts concerning a few important parts of the

Great Chadwick Six

Motor

Cylinders are cast in pairs, each pair being enveloped in copper jacket which provides for a circulation of water in continual contact with the cylinders, which in volume is about six times that obtained by other methods. This system obviates heating and consequent troubles with valves, but does not require any larger water supply than the other systems, our capacity being but five gallons.

Transmission

Our transmission was invented and successfully used by Mr. Chadwick nearly three years before the Mercedes Company of Germany adopted our form of construction without permission. We make this statement merely to prove that we were the first to introduce this superior type of speed change gear.

Drive

The driving chains are enclosed in oil tight, dust proof aluminum cases thus minimizing friction. This patented Chadwick feature precludes any criticism in favor of the shaft driving system, in that it is absolutely silent in operation and the advisability of double chain drive on large cars of great power is well understood by all experienced motorists.

For further particulars send for pamphlet.

CHADWICK ENGINEERING WORKS

SUCCESSOR TO

Fairmount Engineering Works

Spring Garden and 32nd Streets, Philadelphia, U. S. A.

Our 1907 Output is Entirely Sold

Deliveries of the 1908

Models of the

GREAT

Chadwick

SIX

Will Commence June 1st

Place your orders at once if you want to be among the first to secure the most powertul, fastest, easiest running, simplest and finest touring car ever produced.

A comparative test with any or all the touring cars made in any country in the world, and irrespective of price, will convince you of the correctness of our claims. Ask us about our proposition to prove by tests our claims of superiority. We can convince you, and will do so if you give us an opportunity.

(Continued on next page.)

The Vital Question of the Hour

Question: Why are not all motor car manufacturers making six cylinder cars?

Answer: Because all of the large makers are forced to place their contracts for material at least one year ahead and must work up and sell all of this old stock before they will dare to offer six cylinder cars.

Verdict: Let not the automobile maker's misfortune rest heavily on your shoulders, for if you purchase four cylinder cars now, they will, at an early date be back numbers, and the depreciation will be tremendous.

Would you buy a high-powered, high-priced, two-cylinder touring car? Not if if you have ever driven a four-cylinder car. Would you buy a high-powered, high-priced, four-cylinder car? Not if you have ever had a demonstration or driven the **"Great Chadwick Six"**

Practical tests will prove very materially the advantages of the six cylinder car over the four. We offer a proposition, and will gladly arrange with you for demonstrations and tests. We have a special proposition to offer in this respect.
Write us.

(Continued on next page)

What Are The Advantages

OF THE

Great Chadwick Six

and wherein is it superior to the four-cylinder touring car? The **Chadwick** design is such that it is possible to build a large six-cylinder engine which occupies very little more space under the hood than the ordinary four-cylinder type.

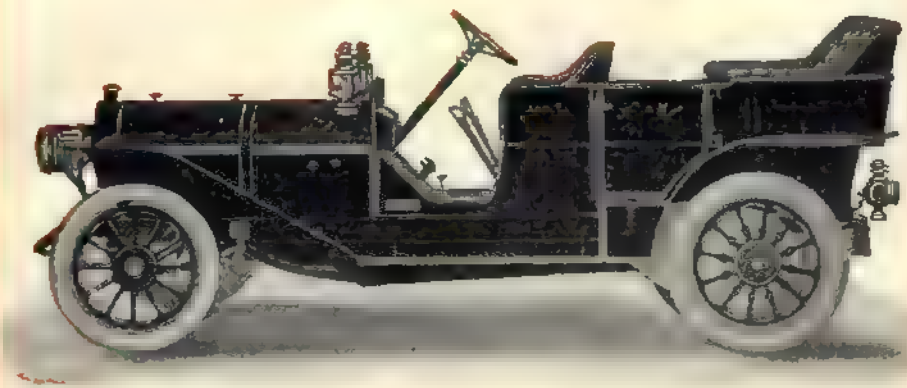
The constant explosions resulting from the increased number of cylinders in the six cylinder type gives a constant power which makes the engine sufficiently flexible to run evenly, quietly, and smoothly. There is a noticeable absence of vibration; there is an ease of control such as cannot be had with the four-cylinder car; there is a reserve power which enables the operator to keep up a uniform speed on either hills or level roads; there is a flexibility which allows of the car being run on the high speed, on either crowded city streets, or rough country roads,—up hill or down.

All these advantages are appreciated by everyone familiar with motor car construction and a demonstration proves to be a revelation. An hour's drive will convert the most prejudiced four-cylinder enthusiast. Don't buy a back number car. Remember the **"Great Chadwick Six"** is in design, material, construction and performance positively the most up-to-date and wonderful car in the world. We can prove this to you by making comparative tests with any and all automobiles that you may name.

For illustration and specifications, see next page.

The Great

Chadwick Six



Price, $5500 F. O. B. Philadelphia
Weight 3000 lbs.

SPECIFICATIONS

MOTOR: Six cylinders, 5″ bore and 6″ stroke, copper jacketed in pairs.

TRANSMISSION: Semi-selective mounted on D. W. F. imported ball bearings, four forward speeds and reverse actuated by single control lever.

WHEEL BASE: 124″, Tread 56″.

SPRINGS: Semi elliptic front, platform rear, made from imported oil tempered steel.

FRAME: Chrome nickel steel, bottle neck type filled in with hickory.

AXLES: Chrome nickel steel of "I" section pattern, drop forged in one piece.

DRIVE: Double chains enclosed in oil tight aluminum cases, readily adjusted.

BRAKES: Foot brake, bronze shoes with cork inserts on large drum located on jack shaft.
Emergency brake, pull hand lever to rear wheels, internal expanding dust proof system of very liberal dimensions; shoes are of bronze with cork inserts.

COOLING: Water. Capacity 5 gallons circulated by sliding vane pump.

IGNITION: Two complete systems, magneto and battery (Simms-Bosch Magneto, high tension). Imported coil and high tension Distributer on battery system.)

GEAR RATIO: Fourth speed, $1\frac{9}{10}$ to 1; third speed, $2\frac{5}{10}$ to 1; second speed, $3\frac{9}{10}$ to 1; first speed, $7\frac{1}{2}$ to 1.

BODY: Aluminum. Seats seven comfortably.

UPHOLSTERY: Best hand buffed leather; genuine hair filled.

COLOR: Carmine or Brewster Green. Special colors extra.

TIRES: Standard Continental.

WHEELS: 34″ x 4″ front; 36″ x 5″ rear.

EQUIPMENT: Two searchlights, Prest-o-lite Gas Tank, standard side oil lamps, rear signal, tools, jack, pump, and horn.

TOP: Extra.

CHADWICK ENGINEERING WORKS

Successor to Fairmount Engineering Works

Spring Garden and 32nd Sts., PHILADELPHIA, PA.

Moline

Model A.

35 H. P.
$2500.

The **MOLINE** Model "A" is a big, roomy, big five passenger Touring Car. It is complete in every respect, and satisfactory in operation in every way.

The points of superiority claimed are:

Quietness and smooth running of the motor
Flexible action of the clutch
Perfectly satisfactory transmission
Exceptionally fine springs
Easy riding qualities
Simplicity and convenience of control
Protection from dust and mud
Unusually fine work in painting and upholstering.

An exhaustive investigation of every feature of the Model "A" is solicited. It is a car that is "making good" in every case. The complete ness of equipment and care given to all details of construction make the car extremely attractive at the price.

The design has been worked out with such care that the complete machine is in perfect proportion, giving the maximum of comfort and pleasure to the passengers, and the minimum of work and care to the driver.

Agencies in principal cities, but some good territory still open.

Moline Automobile Co.

100 9th St., East Moline, Ill.

Member American Motor Car Manufacturers' Association

Moline

Model S.

24 H. P.
$2000.

The **MOLINE** Model "S" is a Big Roomy Little Five Passenger Touring Car. It is built on exactly the same general lines as the Model "A", but is slightly smaller in every way.

It is being put out in addition to the Model "A" to meet the demand for a Five Passenger Touring Car at a popular price. The same points of superiority claimed for the Model "A" are also found in the Model "S".

It has been said that the Model "S" is equipped with the Biggest Little Four Cylinder motor in the market this year. It is a high compression, high speed motor, and develops wonderful power for the size and weight.

Model "S" is causing more than a little comment, and is rapidly jumping into popular favor wherever it is being shown.

A car of this style holds the Road Record between Salt Lake City and Ogden, a course that is rough, mountainous, and which is used a great deal by motorists of both cities for an arduous test. Full particulars on request.

Agencies in principal cities, but some good territory still open.

Moline Automobile Co.

100 9th St., East Moline, Ill.

Member American Motor Car Manufacturers' Association

Moline

Model C.

20 H. P.
$1800.

The **MOLINE** Model "C" is an unusually Racy Looking Two or Three Passenger Gentleman's Roadster. The cut shows the car equipped with a Tiger Seat at the rear. It may also be had with a Turtle Deck, in which case it will accommodate two passengers only.

The General Mechanical Construction of the Model "C" is on a par with that of the Touring Cars, and the rig is extremely smooth running, and very fast. The car is long and low and looks most decidedly snappy.

As in all **MOLINE** Cars the workmanship is of the very highest order, the result being that the motor is extremely smooth running, develops the maximum power and is absolutely dependable.

Considering the equipment furnished and the price quoted the Model "C" is in a class strictly alone for the 1907 market.

Agencies in all principal cities, but some good territory still open.

Moline Automobile Co.

100 9th St., East Moline, Ill.

Member American Motor Car Manufacturers' Association.

Moline

Model H.

18 H. P.
$1250.

The **MOLINE** Model "H" is without a question the finest looking Two Cylinder, Touring Car on the market for 190.. The lines of the body are practically the same as found on the Four Cylinder Touring Car body, and the rig presents an appearance that has been heretofore unknown for a two cylinder machine.

The points of excellence in the construction are exactly the same as claimed for the Four Cylinder Car. The motor is very quiet, smooth running, and develops the rated horse power at a very low rate of speed, although it is capable of a much higher development. The Moline "H" is absolutely complete in detail, and the equipment straight through is the same as is usually found on $2000 Four Cylinder Cars.

Only the very best material is used, and the proportions are positively right.

A most rigid inspection of this car is solicited, and long, hard demonstrations will be gladly undertaken.

Agencies in principal cities, but some good territory still open.

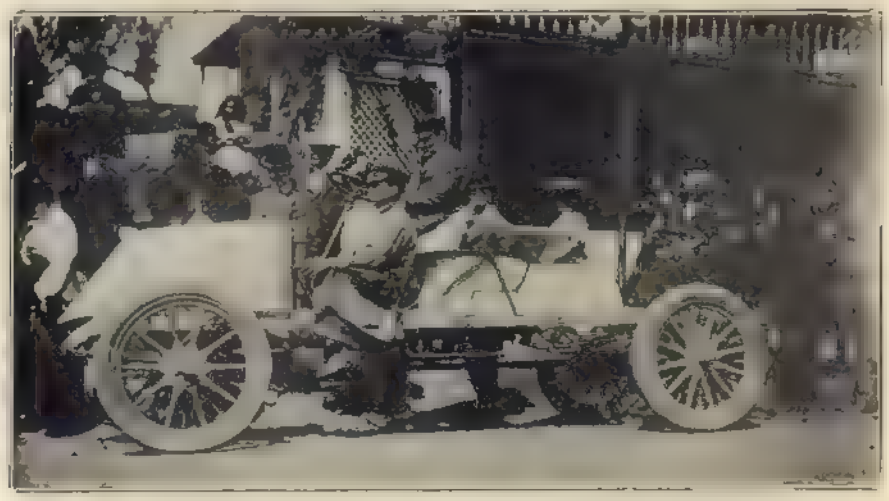
Moline Automobile Co.

100 9th St., East Moline, Ill.

Member American Motor Car Manufacturers' Association

THE INCOMPARABLE WHITE

THE CAR FOR SERVICE



Fastest Time in Wilkes-Barre Hill-Climb

In the Wilkes-Barre Hill-Climb, held on May 30th, a stripped 30 horse-power Model "G" White Steamer made the climb up "Giant's Despair" in 1:49⅘. This time is ten seconds faster than the best record made by a gasoline car. Practically all of the more prominent makes of cars were represented, there being over 50 contestants in this classic event.

Our record was made in a trial against time. We could not compete against anything else because the Contest Committee of the Wilkes-Barre Automobile Club barred us from all the regularly scheduled events, including the "free for all," because, as the President of the Wilkes-Barre Automobile Club informed us, in a formal letter returning our entries, "It was found that a large number of gasoline entries could not be received were steam cars allowed to compete in the gasoline events."

THE WHITE COMPANY

CLEVELAND, OHIO

See That Your A Genuine COES

for you will never have to buy another in a lifetime unless it is stolen or lost, for GENUINE COES WRENCHES are made upon honor and last for all time. The price argument does not exist, because, while the quality is 30 per cent. higher, the cost is but 5 per cent. more, and if this 5 per cent. stands in your way, you are practising false economy to the extent of 25 per cent. Don't let any salesman, for the sake of a larger profit for himself, endeavor to induce you to buy "just-as-good as-a-Coes," or a "Coes-pattern" or a "better-and-cheaper(?)-than a-Coes," or anything that is a substitute, for the COES WRENCH is of known quality, and to the well-informed buyer there is no substitute at any price.

Remember, we have been making COES WRENCHES for seventy years, and we have learned how to make them right in two generations.

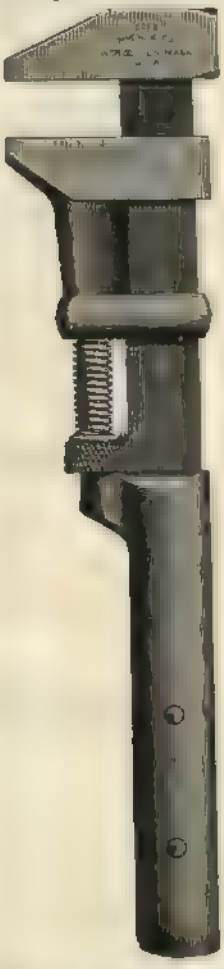
COES WRENCHES are made in five styles and forty-nine sizes, which range from 4 to 48 inches,—one or more of them will meet your wrench needs. They are made with very few parts, and are put together to last. They can be carelessly handled without being injured. This is a test which other wrenches cannot pass satisfactorily.

WRITE FOR OUR WRENCH BOOK.

Coes Wrench Com

Outfit Contains WRENCH

Where other wrenches fail, COES WRENCHES have demonstrated their superiority. We are now selling to the largest automobile manufacturers, jobbers, and dealers, but we would like to add every reliable firm to our list as we know that the COES WRENCH will replace in value received to the purchaser many cast iron fork wrenches and many other special wrenches of various sizes.



If you run a Garage or make or own an Auto, you need these wrenches.

The Key Model

(Right Cut)

28 in. and 36 in long, largest nut wrench made; strong, unbreakable, handy and cheap.

The Steel Handle

(Left Cut)

in seven sizes—from 4 in. to 21 in. Heat, damp and wear proof. Steel handle 30 per cent. stronger, size for size than any imitation or substitute.

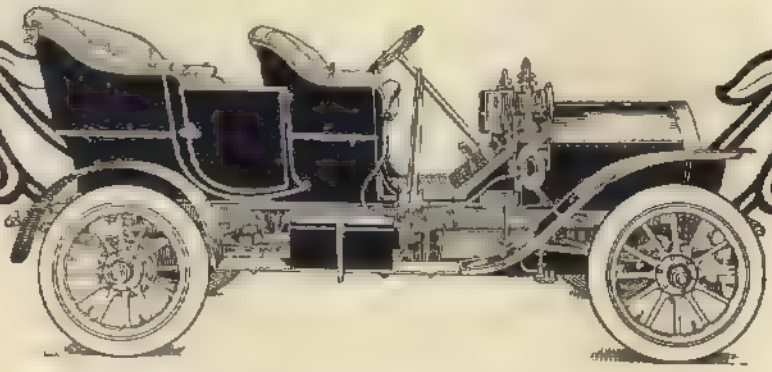
Now is the time the automobilist should be careful to get the right wrench for his tool-kit. Don't fuss and fume all summer because your wrench won't stand abuse. Start the season right, and get a COES without delay. If your dealer hasn't it, give us his name and address, and we will see that you get the GENUINE COES.

pany Worcester, Mass.

KNOX

Go into details

on every other car of its price, ($2500) and compare them with the Model "H" Knox Waterless—and we shall write the receipt for you. It is a "thoughtful" car, full of extraordinary merit. Nothing superfluous, nothing missing, and all that there is the best. It is essentially an owner's car, simple, durable, handy, and as nearly as possible, troubleless, with more horsepower per pound than any other car in its class.



Specifications: 25-30 road horsepower; weight 2250 lbs.; 32" x 4" tires; 102" wheelbase; automatic oiling; three speed selective transmission; deadstop brakes; compensating carbureter; straight line shaft drive; price, $2500. With detachable tonneau and torpedo deck, $2550. Let us send you our 1907 illustrated catalogue, or, better still, arrange for a demonstration.

KNOX AUTOMOBILE COMPANY

Member A. L. A. M.

Springfield, Mass.

The Atlas 2-Cycle Runabout

HUGH DOLNAR.

The Atlas Motor Car Company, a branch of the Knox Motor Truck Company, Harry A. Knox, president, Springfield, Mass., U. S. A., is now producing one per day of the Atlas Runabouts, driven by a new 2-cylinder 2-cycle, water-cooled motor which is rated at 20 H. P. This motor has important new features for which applications for patents have been made, but was put into its present form as here described in detail since the December, 1906, New York Show. The Atlas car shown in December last was driven by a former construction of 2-cycle motor by Mr. Libby, and had a short notice on page 708 of the May 1907, issue of The Journal. As will be seen, the present Atlas motor and car are very different.

Atlas 2-cycle Runabout, front. Front axle by the Standard Roller Bearing Co., Philadelphia. Front wheels on non-adjustable roller bearings, with ball thrust bearings. Radiator, long, vertical tubes.

Atlas 2-cycle Runabout, rear view. Rear axle by the Standard Roller Bearing Co., Philadelphia. Bevel gear reduction 3½ to 1 reduction, spur balance gear. Rear wheels on tapered axle studs, key and nut retention. Axle bearings of bevel gears in case, outer bearings on hard sleeves, non-adjustable, ball thrust bearings.

Wheel base, 90 ins.; gage, 56 ins.; tires, 30x3½ ins.; motor, 2, water-cooled, 4½x4½, vertical cylinders, placed under the hood in front. Thermal circulation, no fan, front, no water pump and thermo-siphon cooling. Two forward speeds and a reverse, bevel gear to divided rear axles. Weight about 1500 lbs. Price $1400.00, including mat, horn, tools and two oil lamps. Folding top $50 extra. Low, full-fitted top $120 extra. Folding top equipment, $35.00 for the complete folding top equipment. The top cover is not indispensable to the top, but is neat, cleanly and saves wear of the folded top.

The Atlas Company. The first approximation of this motor design was made by Mr. Libby in 1902, patent applied for Broadway, Mr. Libby's improvement in 2-cycle gas engines consists of peculiar passages formed in the piston which permit both the exhaust and

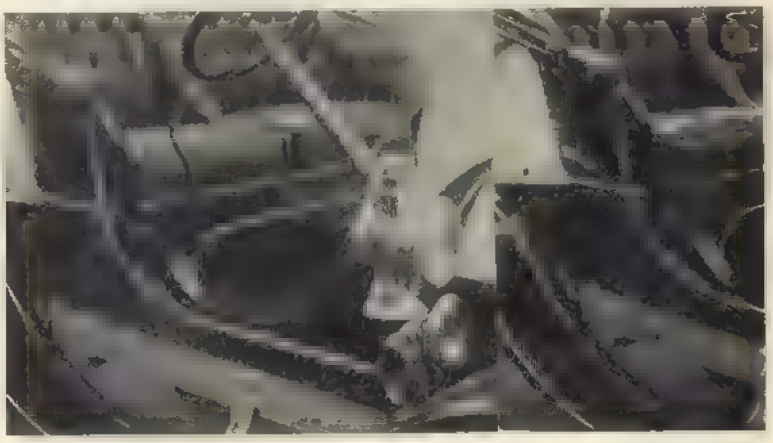


Fig. 3. Atlas 2-cycle Runabout showing the hinged right-hand door gear lever, the only one on the car. Pushed forward this gives high speed and pulled back gives low speed. This lever hinders entrance to seat from right side of car, when in normal position, but swings outward as shown so as to give perfectly free seat entrance on the driver's side. This is a novel and convenient feature of real practical value.

PECULIARITIES OF THE MOTOR.

The Atlas Runabout Motor was designed by Mr. Dorville Libby, Jr., formerly of San Francisco, Cal., now supervising engineer for

intake ports to occupy the entire cylinder circumference save for the needful bridges, in two different planes at right angles to the axis of the cylinder bore, and also deliver the charge to the cylinder in a central column directed upwards toward the cylinder head which tends to clear the cylinders of the pre

Fig. 5. Atlas 2-cycle Runabout. Left hand side of motor in car, hood removed. See elevation of motor This picture well shows the simplicity of the 2-cycle motor. These two cylinders, without valves, pump or fan give same torque as a 4-cylinder, 4-cycle motor

viously burned charge residue, and place the charge in the cylinder in a superior manner highly conducive to certain ignition of partial charges and complete combustion.

These features give the Atlas 2-cycle motors great probability of prompt starting, as well as great flexibility of motor power. In point of fact the Libby motors invariably, so far as observed by the writer, start at the first pull of the crank, and give the car from 3 or 3½ miles to 35 or 40 miles per hour on high gear. Sufficient illustrations are herewith given to fully disclose the arrangements.

In 1904 Mr. Libby built cars driven by

Fig. 6. Atlas 2-cycle Runabout, right side of motor, hood removed. The shive on front of frontboard drives the mechanical oiler, 5 leads. The motor is water cooled, thermal circulation, tapering delivery pipe from tops of jackets to radiator. Fan fly-wheel, no fan in front.

two 2-cycle cylinders, and in 1905 one of these cars came into the hands of Harry A. Knox, of Springfield, well known as one of the early designers of American cars driven by air-cooled 4-cycle motors. Mr. Knox made many different designs of small gas-engines, and was early impressed by the obvious generic advantages of the 2-stroke cycle, and

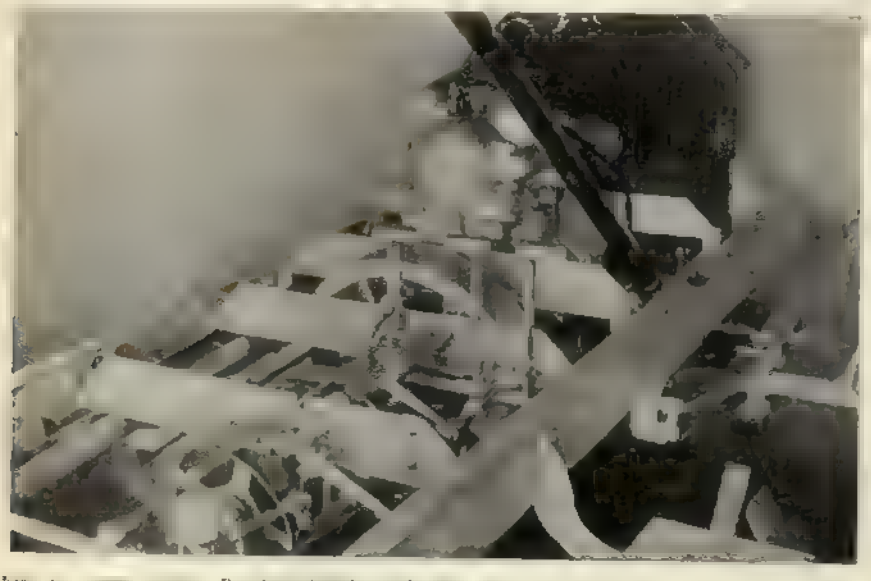


Fig. [illegible] Runabout Chassis, right side from front universal joint forward, showing [illegible] 2 ins. on [illegible] pedal actuated and is fitted with an integral [illegible] operating [illegible] hole lever. The chassis frame-sides are of ash [illegible] depth [illegible] angle steel lengths are bolted to the inside of the forward [illegible] frame [illegible] cross members, [illegible] to the others. The side frame angle-bars, which answer as a sub-frame, are inclined so as to [illegible] the line shaft and propeller-shaft in line when the springs carry the normal load. The cross supports are 2x3x3 16 angle steel, wide member vertical, narrow member below, resting on the angles bolted to the insides of the side-frames.

went so far as to build a 2-cycle motor in 1896, but was deterred by opinions of experts of that early motor-car day from proceeding with the 2-stroke cycle. When Mr. Knox began to run a car driven by a Libby 2-cycle motor he was impressed with its all-round superiority from first to last, and after driving this 2-cycle motor for more than a year he induced the designer to come to Springfield.

The cylinders have no valves, but there is one mechanically-operated crank-box valve, which, however, merely goes round and round with the crank-shaft, opening the crank-box to the carburetor when either piston goes up, if turned the right way, so the motor cannot be started nor run the wrong way.

This motor handles the charge and exhaust on a concentric plan, so that the charge comes in from four sides of the cylinder and

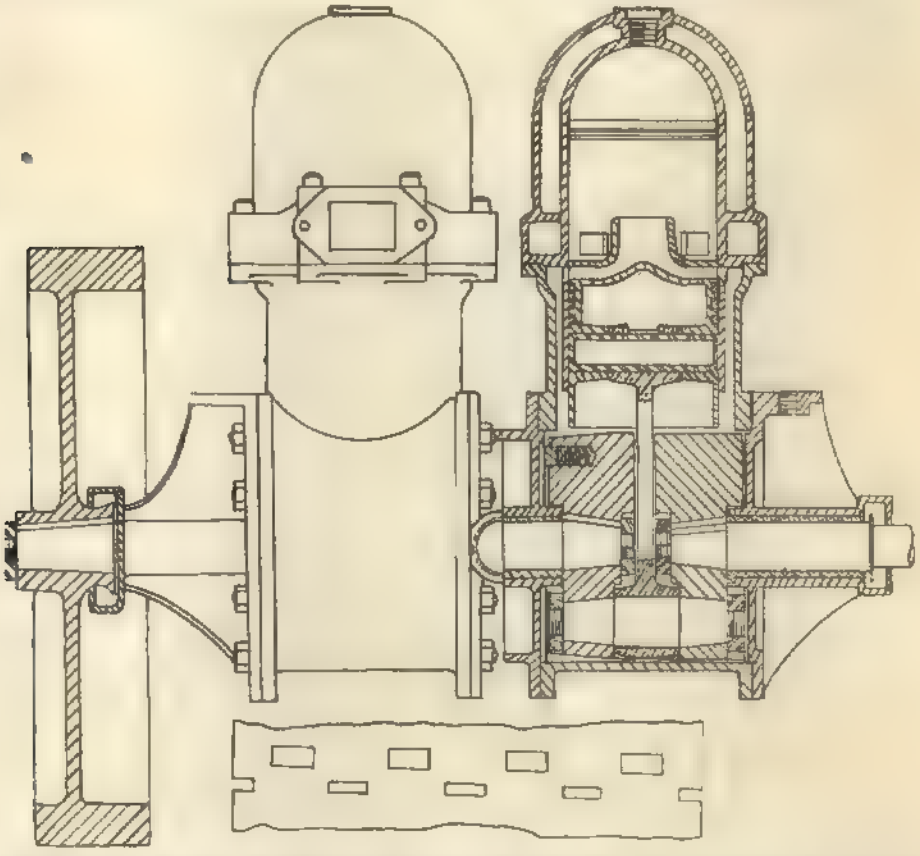


Fig 7. The Derville Libby 2-cycle motor. The crank-case intake port is covered by a plain disk-valve having a port, which is driven, even turns with the crank shaft, and pressed against the carburetor delivery port face by light coiled-springs. This disk-valve has one port thru it, so located as to take mixture into the crank-case only when the motor runs in one direction. This intake-valve replaces the automatic valve between the carburetor and crank-box.

NOTABLE FEATURES

This smart little Atlas roadster is a car for every-day service, moderate size, with power enough to be mighty busy week-days, good looking enough to go on the road Sundays and easy riding enough for moonlight wanderings.

Its wheels are on roller bearings, springs better than half-elliptics, a wooden chassis-frame and a 2-cylinder, 2-cycle motor that starts when the crank is pulled, and is flexible enough and strong enough to give from three and a half or four miles, a smart walking pace only, to 35 miles or more on high gear, which is 3½ to 1, making frequent speed-changes needless.

shoots up the middle of the cylinder and down next to the cylinder walls, giving an ideal charge entrance and charge placing in the cylinder for ignition. The exhaust goes out of the cylinder in four directions and is collected in an annular exhaust passage, opening to the muffler.

The chassis frame is of ash, light, stiff, strong, elastic with no sub-frame, and the motor and planetary, 2 forward speeds and a reverse change-gear are hung on 6 pieces of plain, straight angle-steel, two pieces bolted to the insides of the chassis frame-sides and four other straight pieces, two bolted to the motor and two to the transmission, go cross-wise of the chassis frame with

their ends resting on the angle-steel pieces bolted to the insides of the frame-sides on the slant, so that the line-shaft and propeller-shaft are straight with each other at normal spring-deflection.

The Atlas springs are all ¾ elliptics. Front springs 43x1¾ inches, 5 leaves in bottom and four leaves in top half member, jointed in

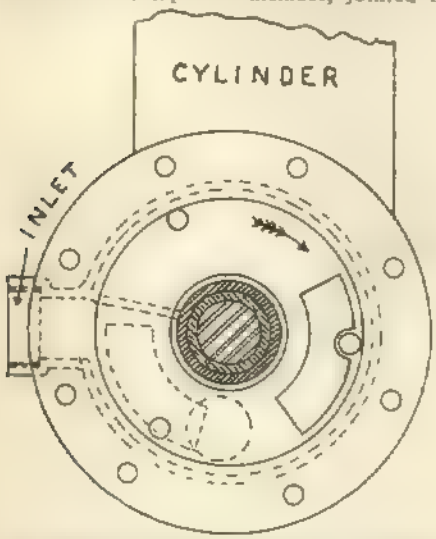


Fig. 8. Libby 2-cycle motor, front end of crank-box connection, showing the crank-box intake port. The cylinders are off-set ⅝ of an inch. See Fig 7 and caption

front, tongued and grooved, perched 20½ inches front eye to middle of axle. The rear springs are 43x1¾ inches, 4 leaves in top half and 5 leaves in bottom member, tongued and grooved and perched 22½ inches from the front eye under the axle

The Kingston carburetor is used, and the motor starts promptly and is always ready to work at any speed. A rectangular, galvan-

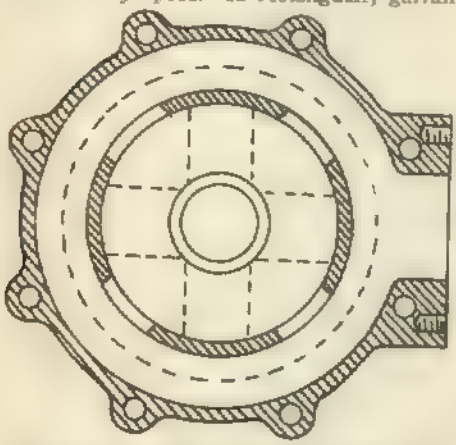


Fig. 9 Section of cylinder in B B, Fig 7, showing exhaust ports, bridges between the exhaust ports, and the annular exhaust passage to the muffler.

ized-iron fuel-tank is placed under the driver's seat. The control is simple, and access to the driver's seat is made easy by jointing the one and only hand-lever, which is worked to give high and low speeds, so that it can be moved out of the way when the driver wants to enter the car.

BODY AND MUD GUARDS.

The car-body is of sheet aluminum, and the mud guards are carried down inside in front, and are continuous with the side footboards, so that the car is well protected. The inside mud-guards are rather short in front but nearly all the 1907 cars are that way, and

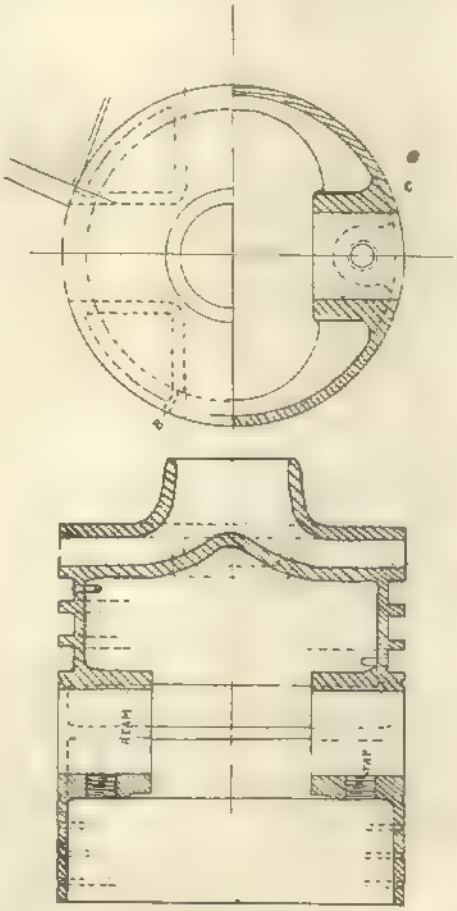


Fig. 10. Libby 2-cycle Motor, piston construction. The intake is thru four ports open to the crank case at low point of stroke. These ports open freely to the central intake nozzle, directed straight upward. The charge rushes up to the cylinder head in a central column, and then spreads out to fill the cylinder much as may be, with the certainty of clean mixture on top when the charge is compressed. The exhaust is all round the cylinder, so the whole of the exhaust and intake volume movements are concentric and symmetrical. This engine is prompt starting probably because of these new features of concentric intake and exhaust

one might as well be dead as be out of fashion. With all seriousness, all the 1907 inside mud-guards seen by the writer are a little too short in front, and the right kind of a puddle goes to the front-seat passengers' faces with certainty and dispatch, tho not exactly with neatness, same as of yore, before the inside mud-guards were placed at all.

This spry little machine is really such a cheering departure from standard complications and trouble-makers and is a decided advance in what the writer, at least, is firmly and fully convinced is the right direction.

ON THE ROAD

Wednesday, May 15, was a bright, clear day, for a wonder, not so very cold, and an Atlas runabout, fuel-tank full, with Frank H. Fowler driving and the writer as passenger, hustled out of Springfield soon after

Fig. 11. The Atlas 2-cycle Runabout Control. The spark and throttle are controlled by ratchet retained levers on top of the hand-wheel. The steering is a worm and sector, hardened, worm end-shake adjustment, by Warner, Muncie. The high and low gears are had by the single hand lever which is pushed forward for high gear and pulled back for low gear and is hinged to swing outward to give access to the driver's seat. The ignition is dry cells to one coil in a box inside the front board, with high tension distributor and jump spark plugs. The Lavigne mechanical oiler 5 leads, is on the inside of the front board, and is round-belt driven. The left hand pedal applies the rear-hub, internal, emergency brakes. The middle pedal gives the reverse. The right hand pedal applies the ordinary brake band on the line-shaft brake drum. No muffler cut-out is fitted

breakfast for a run to West Warren and return, this route being selected because it has a lot of good macadam surface, plenty of hills and some of the worse surface of any main road in New England, rough, sandy, crooked, stony and abominable in every particular. One notable point, known rightly as "Mud Hill," has two living springs in the roadways, which keep it wet the year round and give this hill the unique distinction of being a steeply inclined and deeply rutted clay, sand and stone mud surface, absolutely the worst bit of highway in the writer's experience.

Between West Warren and Cooley's crossing a horrible piece of road is now being actively improved, steam-rollers and stone-crushers and gangs of road-makers at work, so that we had all sorts of hindrances besides the bad old road surface. Time was taken at known points, but no attempt at speed was made, about 25 miles being the maximum estimate of high rate. The car had no speedometer, but had a mile recorder, so that total travel for the trip was known (except up and down Mud Hill, and in one place where roadmakers disputed our right of way with a four-horse team and a plow, the car made the entire run on high gear, and was all alive, courageous and able everywhere, up hill and down hill, in deep sand and picking its way thru ruts and mud holes, over bumps and around big stones, with plenty of power, and unexpectedly easy-running. The springs seem a bit stiff on smooth road, but were just right for rough work, and the wheel base is long enough to give steadiness, and yet short enough to make the machine handy in difficult places. Our only mishap was the loss of a lamp, that on the driver's side. The lamp brackets were of a too light discarded pattern in brass, and one broke and the lamp got away without notice. The lamp brackets were changed to present regulars when the car reached the factory at 11.50 A. M., having made 55¾ miles round-trip, and taking four gallons of gasoline to fill the tank full again, almost exactly 14 miles to the gallon of fuel consumed

There was no course open for speed, but a short run was made later in the day in which the Atlas showed 36 or 37 miles easily, and this runabout can probably make 40 miles on a good road surface. It is nearly noiseless and has almost no vibration

The performance of the motor was perfect, prompt start and plenty of power on the high-gear for all sand and mud, and for all hills except the never-to-be-forgotten Mud Hill, where the deep ruts and high bumps made a low-gear crawl the only pace possible for any car.

England Leads in Isle of Man Races

The third annual contest for the international tourist trophy race on the Isle of Man, May 30, was won by E. Courtis, in a 20-horse power Rover. The first contest for the international heavy car trophy was won by G. P. Mills, driving a 30-horse power Beeston Humber

A. A. A. Good Roads Board

The American Automobile Association's good road board for the year of 1907 as announced by president Hotchkiss numbers thirty-one. One chief object of this committee will be to secure federal aid toward the improvement of at least the trunk roads in the various States.

Connecticut Contemplates Abolishing Speed Limits

A bill is before the Connecticut Legislature which provides for the abolition of speed limits, the section referring to speed limits reading: "No person shall operate a motor vehicle on the public highways of this State recklessly, or at a rate of speed greater than is reasonable and proper, having regard to the width, traffic and use of the highway, or so as to endanger property or the life or limb of any person."

Packard "Thirty" for 1908

The 1908 Packard car shows a continuance of the well-known Packard policy of one model a year and that model a development of, rather than a departure from, the preceding model. In producing its new Packard "Thirty," the Packard Motor Car Company, of Detroit, Michigan, has retained those features of design and construction which have become recognized as thoro ly "Packard," and has changed detail as experience has taught and as dictated by a keen study of refinement.

The new "Thirty" has a slightly longer wheel base and 36-inch wheels. The body rests low on the frame, plenty of allowance for spring action being obtained by recessed panels in the sides of the tonneau, which also allow an extremely wide and comfortable rear seat. This 1908 Packard, while most notably a touring car for general service, is supplied as a limousine, landaulet and runabout, or is equipt with cape cart or Victoria top.

1908 Packard "Thirty." Note the arched indentation in the side panels of the rear seats, thus providing clearance for the wheels while allowing the use of a wider and more comfortable seat. The wheel-base is 123½ inches, and 36-inch wheels are used. Price, with standard finish and equipment, $4200 f. o. b. factory.

THE MOTOR

The 4-cylinder, vertical, water-cooled motor is of 5-inch bore by 5½-inch stroke. The European rating is 30 horse-power at 650 revolutions per minute. The actual brake horse-power by the American system exceeds this figure. The cylinders are cast in pairs, with water jackets and valve chambers integral. The castings for cylinders, exhaust manifolds, pistons, and piston ring blanks are made in France, from a gray iron especially adapted to the construction of such parts. The pistons are ground and are fitted with four ground rings, the cylinders, pistons and rings being "lapt" together with a suitable polishing agent which gives them a highly-finished surface and a smoothly-working fit.

The crank shaft is cut from a solid billet of hammer-forged, high-carbon, open-hearth steel. It is oil-tempered; all bearing surfaces are ground and the entire shaft is machine finished. It runs on three liberal bearings bushed with Parsons white bronze. The connecting rods are drop forgings. The crank pin bearings are bushed with Parsons white bronze, and the piston pins with hard bearing bronze.

The inlet and exhaust valves are on opposite sides of the cylinders; they are all mechanically operated and interchangeable. The cam shafts are enclosed within the crank case and are hence fully protected from dirt and certain of ample lubrication. The cam shaft drive gears, as well as those of the magneto and water pump, are contained in a separate, but integrally cast, oil-tight extension of the crank case.

CRANK CASE

The crank case is cast of a special aluminum alloy in three horizontal sections. The uppermost section forms the engine base and is supported directly on the side members of the main frame of the car. On each side, between the transverse supporting arms, is a horizontal, integrally-cast web which entirely encloses the space between the motor and frame, affording complete protection to the motor, magneto, and other parts above it. The crank-shaft bearings are held between the uppermost and middle sections, while the bottom section is simply an oil well, easily removable for inspection or adjustment of the connecting rods, cam shafts, etc., without disturbing the crank-shaft bearings. The crank case is divided into front and rear compartments by a transverse central partition which supports the middle crank-shaft bearings. The crank case drain cocks are provided with new anti-clogging devices.

CARBURETOR.

The carburetor is of special Packard design and construction. It is of the float-

Steam Vehicles

J. A. KINGMAN

ACETYLENE GENERATOR FOR BURNER.

Plattsburg, N. Y

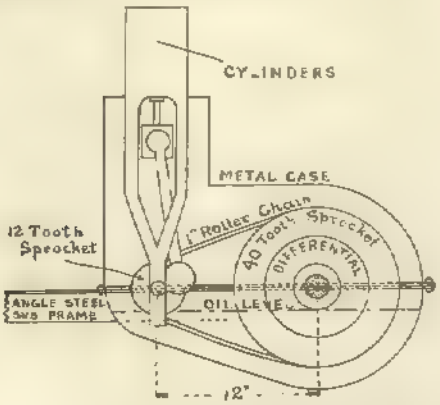
The following will interest H. S. F. (page 185, June issue.)

I was in Burlington, Vt., a few days ago, where I saw two Stanley steamers fired up without torch, the burner being heated by an acetylene jet permanently attached to the car. Mr. E. A. Brodie, 105 Church street, Burlington, Vt., can give name of parties from whom attachment can be bought. I did not myself ascertain where the contrivance is to be had, as I do not use this gas for lighting up lamps on my car. The whole trouble of heating torch is avoided, and it takes not more than ten seconds to heat burner ready to light pilot and main fire. I had seen the contrivance advertised before, but this is the first time I ever saw it in use. It appears to save much trouble in firing up, though one must be careful not to melt burner tips with intense heat of the acetylene gas.—A. N. HENSHAW.

DRIVE FOR STEAM RUNABOUT.

San Bernardino, Cal

I would like to ask you through the "Cycle and Auto Trade Journal" your opinion of the inclosed sketch for a drive for a steam runabout. Engine to be of the "Mason" type and drive by roller chain to sprocket on live rear axle. Engine to be placed only 12 inches from rear axle, so that all moving parts, engine, chain, sprocket and differential can be inclosed in one metal case and be splash lubricated. Entire power plant flash boiler and engine—to be hung on a triangular angle steel sub frame to give three-



Proposed Drive for Light Steam Cars.

point suspension; two corners of frame to be pivoted to rear axle spring boxes and the third point pivoted to cross member of body frame under dashboard. Will the engine shaft and rear axle be far enough apart to give an efficient drive with chains of this type? Would a short chain like this one stretch enough in use to require some means of adjustment of shaft distances?

In general, between what limits can a chain drive be economically employed? Would 10 inches be too close for the shaft with above drive, and will a 1-inch pitch roller chain work satisfactory if shafts are 48 inches apart? In considering the above questions, it is understood that an efficient transmission that will give little trouble is desired.—CHAS. BRADSHAW.

Generally speaking, the larger the sprockets and the shorter the chains in any system of chain drive, the better. A very long chain drive has been found in practice to be undesirable, and all chainmakers are opposed to the use of sprockets having less than a certain number of teeth. It would seem, therefore, that the number of teeth on the sprockets would be a more important matter for consideration than the distance between sprocket centers.

The 1-inch pitch chain seems a little coarse. Should think smaller pitch would be more desirable. Of course, some methods of adjusting the chains should be provided for, but if the case inclosing the mechanism is oil-tight so that the lubricant does not leak out and dust does not work in, the need for adjustment should be very slight and infrequent.—J. A. K.

TROUBLE WITH PILOT LIGHT.

Walton, N. Y., June 7, 1907.

The letter from Mr. C. S. Lawton, of Woonsocket, R. I. (20 Bill street), received, and would like very much to hear his experience, and any suggestion he might make. He says his burner is a two-part burner, and my burner is also a two-part burner. I have been driving along the street and all at once the pilot light would go out and when the steam drops 5 or 10 pounds then the main burner vaporizes the oil but there would be no pilot light to ignite the gas—then, oh, what a smoke! I would stop and shut off the kerosene and wait a little and then light the pilot by using wood alcohol, but first would have to push the pin in the pilot vaporizer to clean out the carbon, then it would sometimes run an hour or two and sometimes not more than from 10 to 20 minutes. Now as to the burner, when it is working hard it will sometimes make a roaring noise that you can hear for half a mile (some call it whistling). Now if anyone can give me a remedy for these troubles I would be very much obliged to them.—E. P. RANDALL.

Would suggest that you clean the pilot light orifice regularly at some stated interval, not merely making an opening, but cleaning all metal parts thoroughly. The deposit of carbon is unavoidable, but if you will consider this carbonization as a perfectly natural process and look out for it regularly you ought not to ever have it bother you on the road.

As to the noise of the burner, alteration of the air adjustment ought to correct this.—J. A. K.

Natoma, Kansas, May 23, 1907.

I have a Locomobile steam runabout, and as rain water is scarce, I should like to know if I can use hard water successfully without ruining the boiler. How can I remove the scale from the boiler if it is already limed? Would it be more economical to move the regular gasolene burner and replace it with a kerosene burner if gasolene is 17 cts. and kerosene 8 cts. per gallon? Will I be able to keep steam on as low pressure of air as with gasolene? I use more fuel than I think I should—how far should I get on a tank of five gallons on ordinary roads? What is likely to be the cause of my using so much oil? I keep my engine hooked up so as not to use much steam. Can I fit the regular "Loco" burner to burn kerosene? R. A. M.

Use rain water whenever you can and when you are compelled to use hard water blow off the boiler after the car has been used. Fire tube automobile boilers have never given very much trouble from scale, owing to the fact that the motion of the body on the springs gives a continual vertical washing of the tubes and about the only deposit which has ever been noticed has been on the lower ground sheet and this in the form of mud rather than scale, and which can be avoided by regular blowing off of the boiler. Dirty water is about as bad as hard water.

Certainly it would be more economical to use a kerosene burner than a gasolene burner so far as consumption goes, and if you make a change you will find it necessary to remove your present burner and install a complete kerosene outfit. This, of course, would involve considerable expense. It might be some little time before you had run the car far enough on kerosene to have saved enough to have paid for the cost of making a change. Trust the foregoing is clear. It might be well worth your while to make the change not on the grounds of saving a few cents every day in the cost of fuel, but on the grounds of convenience, as it is sometimes very difficult to obtain good gasolene when kerosene of uniform quality is everywhere available.

You ought to be able to run the car 8 to 10 miles on a gallon of gasolene—40 to 50 on one filling. J. A. K.

feed, aspirating nozzle type, with automatic auxiliary air inlet. The mixing chamber is cylindrical and vertical, containing in its lower portion the aspirating nozzle and above this a butterfly throttle. The carburetor is secured to the intake pipe by four bolts. The auxiliary air inlet is a poppet valve under control of a coil spring. It automatically governs the intake of air to keep the mixture of the correct proportion at all engine speeds. Its tension, to suit different atmospheric conditions, may be regulated by a sliding wedge, which is actuated by a small lever on the dashboard of the car. The carburetor is kept at a uniform temperature by warm water circulating thru a jacket surrounding the mixing chamber. This circulation is incorporated in the general water-cooling system of the motor. The fuel supply is taken by gravity from a copper gasoline tank under the front seat and containing twenty-one gallons.

1908 Packard "Thirty" Runabout. The motor and driver's seat are placed further back than on the touring car, and the wheel-base is 108 inches, while the seats are lower. The gasoline tank has 27 gallons capacity

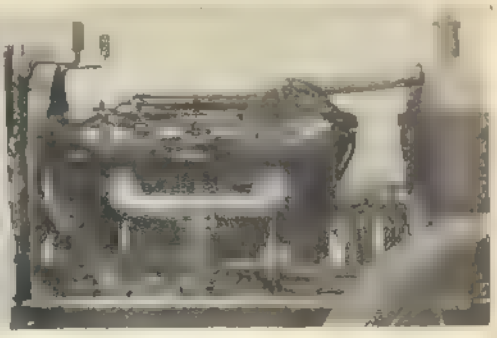
WATER CIRCULATION.

The water circulation for cooling the motor is positive by means of a gear-driven gear pump. The radiator is of the ribbed style, combined with the tank. Forced draft to increase the cooling efficiency is obtained by a belt-driven fan. It is adjustably mounted on a bracket on the front of the motor base, so that the tension of the belt may be regulated. The fan runs on imported annular ball bearings. The water-circulation system has a capacity of six gallons. The water, oil and gasoline tank caps are secured by bayonet locks instead of screw threads.

IGNITION.

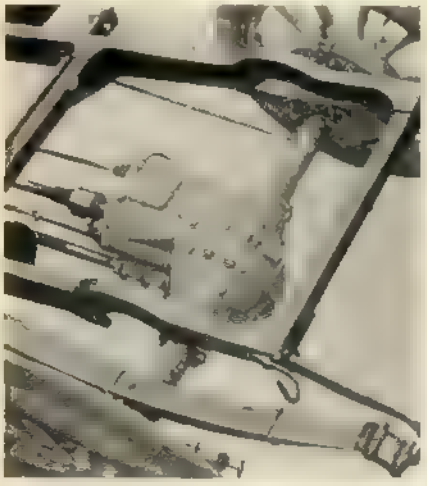
Ignition is by jump spark, the current being obtained from an imported Eisemann low-tension magneto. This is mounted on the motor bed on the left side and is direct gear-driven by enclosed gears. A Fuller imported storage battery, used primarily for starting the motor from the seat, is always in reserve. There is a transformer coil for the magneto current, and a vibrator coil for the battery current. The two coils, with a single hand-switch for both magneto and battery between them, are arranged as a unit in a box on the dash. The switch is provided with a lock. The commutator for the battery primary current is on a vertical shaft at the rear of the motor and is driven from the cam shaft by enclosed bevel gears. There is but one set of secondary, or high-tension, wires, the same spark plugs being used for both magneto and battery systems. The plugs are connected with the secondary wires by knife switches. These permit the instant disconnection of any plug for inspection and testing of ignition or for other purposes.

Left side of 1908 Packard Motor, showing the oil pump, oil tank, magneto, timer and wiring



Right Side of 1908 Packard Motor, showing fan mounting and adjustment, water governor, carburetor and individual knife switches at the spark plugs

The lubrication of the motor is by splash from the crank case to the cylinders and engine bearings. Oil is pumped separately to the front and rear compartments of the crank case. The transverse central partition maintains an independent level of oil below each pair of cylinders, regardless of the inclination of the car on grades. The double plunger pump is accessibly located at the left of the motor and is driven by a worm on the exhaust valve cam shaft. It takes oil from a vertical copper reservoir close to and between the pairs of cylinders, this location insuring that the oil will be warmed



Packard 'Bridge' Rear Axle, differential and speed change gear. The case is the 1908 is provided with an ertial instead of external ribs

and thus kept in a fluid condition, even in coldest weather. The oil, on its way to the crank case, passes thru two drip sight-feeds on the dashboard. The compression relief cocks are of improved design to facilitate their operation

ENGINE CONTROL.

The engine speed is under the control of a hydraulic governor. This is a diaphragm apparatus incorporated in the water-circulation system. It acts directly on the butterfly throttle above the carburetor, and tends to prevent the motor from racing when the car is standing with the motor running idly. Its limitations are adjustable and, by a pedal, it may be cut out of action for instantaneous acceleration. The throttle is also under the control of the hand lever on the steering wheel, while another manual lever on the wheel advances or retards the spark.

The Packard type internal expanding clutch is retained, with improved construction to insure gradual engagement. The expanding ring within the fly wheel rim is actuated by a screw-and-nut device and is provided with means of easy adjustment.

PROPELLER SHAFT CHANGE SPEED GEAR AND REAR AXLE

The propeller shaft connecting the clutch with the transmission gear has, at its forward end, a newly-designed universal joint of the yoke type especially suited to the greater angularity existing at this point than at the rear, where there is a roller universal joint. Both joints are effectively encased The speed-changing set, final drive and differential gears are all contained within a rigid aluminum housing, as in the 1907 models, thus forming a unit. In the new design, the casting is internally ribbed, while the outside is smooth. Independently of the live rear axle, the differential unit is supported on its own bearings. Thus the live axle may be withdrawn without disturbing the gears. Three forward speeds and a reverse are obtained by the sliding gears of the speed-changing set. The third speed forward is by direct drive. That the shifting of the sliding gears for different speeds may be easily and progressively accomplished, the actuating slide rod is annularly grooved to correspond with spring-retained spacing dogs which determine the respective correct positions of gear engagement. The reverse is obtained by a separate lever. All gears in the transmission, final drive and differential, as well as the rear axle, run on imported annular ball bearings.

Packard Internal Expanding Clutch, foot pedals and rear of the dash, showing the two sight feeds and the lock switch on the coil box.

BRAKES

There are four brakes. On each rear wheel there is a brake drum, upon which act both the internal-expanding and the external-contracting brakes. The external brakes are operated by a pedal for regular use, while a side hand lever controls the internal or emergency brakes. A drum disc entirely encloses and protects each internal brake. This system of brakes obviates the use of braking power thru the change gears and insures quick, positive application of both foot and hand brakes. A new pedal design obtains a much shorter travel and greatly decreases the length of slots in the foot board.

Steering is by the usual hand wheel, thru a worm-and-sector gear. The worm and sector are forged integrally with their respective shafts. The steering wheel has been increased in diameter and greater rigidity has been obtained by a large steering col-

umn. The steering spindles and yokes are drop forgings forming jaw, or what is known as Elliot type steering knuckles. To obtain greater ease of steering the length of the knuckle spindles has been increased. Imported ball thrust bearings are used in the knuckles, and all steering connections have provision for lubrication.

FRAME

The running gear frame is of channel section prest steel, arched above the rear axle to provide increased spring action without raising the body. The top and bottom flanges of the side bars extend inwardly at certain points to form integral gussets for the reception of the four respective cross members. The frame is cold-riveted thruout. There is no sub-frame. The frame is suspended upon four unusually wide, semi-elliptical springs. The rear ones are 56 inches long and the front ones 40 inches long. The front axle is of steel tubing of large diameter and heavy gage. The stationary sleeves of the rear axle are steel tubes prest into and riveted within flanged collars that are bolted to the differential and driving gear housing.

The wheel base is 123½ inches and the tread is 56½ inches. The wheels have been increased in diameter to 36 inches. They are of wood, of the artillery pattern. The front wheels have each ten spokes and the rear wheels twelve spokes. All wheels run on imported annular ball bearings of increased size. The front tires are 36 by 4 inches and the rear tires 36 by 4½ inches.

BODY.

The touring body, in its new combination with 36-inch wheels, has a longer and more stable appearance and obtains individually by arched recesses in the rear seat panels to provide clearance for the rear wheels. The body is made of aluminum over wood framework. The seats are upholstered in black straight-grain leather, over curled hair and with spiral spring backing thruout. To provide greater comfort, the rear seat cushions have been increased in thickness, lowered and are differently sloped. The standard finish is Richelieu blue and cream yellow. The price, with standard finish and equipment, is $4200, f. o. b. factory.

As a limousine or landaulet, the chassis is identical with that of the touring car. In the case of the runabout, however, there are several differences in keeping with requirements. The wheel base is 108 instead of 123½ inches. The motor and driver's seat are placed farther back on the frame than in the touring car, thus making the bonnet longer and properly distributing the weight. The divided front seat is lower, relative to the floor. The gasoline tank holds 27 instead of 21 gallons and is placed at the rear of the frame. The gasoline feed to the carburetor is by simple, automatic pressure system. Above the gasoline tank is a rumble seat. The standard tire equipment is 36 by 3½ inches in front and 36 by 4 inches in the rear. There are no other notable differences between the runabout and the touring car.

The "U. S." Model A, Gasoline Runabout

U. S. Motor Car Co., Upper Sandusky, Ohio, have just placed on the market a runabout propelled by a 12-H. P. gasoline, air-cooled, 3¼x3, 4-cylinder motor and are cataloging their first car as Model A. Ignition is by jump spark and a float feed carburetor is used. Oiling is by splash. The crank shaft is provided with 5 babbitted bearings. Speed changing is thru a sliding type speed change gear, which is ball bearing. Three forward and one reverse speed changes are provided. On the high speed the drive is direct with no gears in mesh. A double disk clutch of their own design is used which they claim starts the car smoothly without jerk and does not stick. Shaft drive is employed and a foot-operated service brake acts on the driving pinion shaft. Emergency brakes of the constricting band type operate on the rear hubs.

Four full elliptic springs support the body, each 40 inches long. The wheel base is 90 inches and the tread 56 inches. Wheels are 32 inches in diameter and the tires 3 inches cross section. A light, strong frame of selected hickory is used. Large wood fenders give ample protection from flying mud and do not rattle. The seats are of the individual type and are large and roomy and are fitted with soft edge cushions. A quick acting steering device is employed, operated by a hand wheel with throttle and spark levers on the steering post close to the driver's hand.

A roomy platform is provided in the rear of the body fitted with a double brass rail making it safe and convenient to carry parcels or a small trunk and thus adapting the car to light delivery service if desired.

The equipment consists of two oil side lamps, tool box on running board and full kit of tools. Price is $750.

It has been the aim of the makers to produce a light, easy riding car which would be economical of tire expense and they have also aimed to use the best possible material. Drop forgings are used wherever possible.

Charles E. Duryea, pioneer automobile builder, has become engineer of the Corbin Motor Vehicle Corporation, New Britain, Conn.

According to the reports issued by Colonel E. S. Fowler, appraiser of the port at New York, there was a falling off in the importation of foreign cars during the period from January 1 to May 1, as compared with the previous year. The total during the past four months was 384 automobiles, valued at $1,261,296.52, compared with 452 automobiles during the same period last year, with a valuation of $1,464,862.13. During the month of April 108 machines were brought in in comparison with 152 during 1906.

The Wayne 1908 Cars

HUGH DOLNAR.

The Wayne Automobile Company, Detroit, Mich., U. S. A., built and sold nearly 600 cars in 1907, about 500 of which were five-passenger touring cars, and 100 were three-passenger runabouts, same price, $2500 for each.

In 1906 the company adopted the I-section steel drop forging axle in place of the tubular front axle before used, and about 100 of the 1907 Wayne cars had I-section, drop forged front axles.

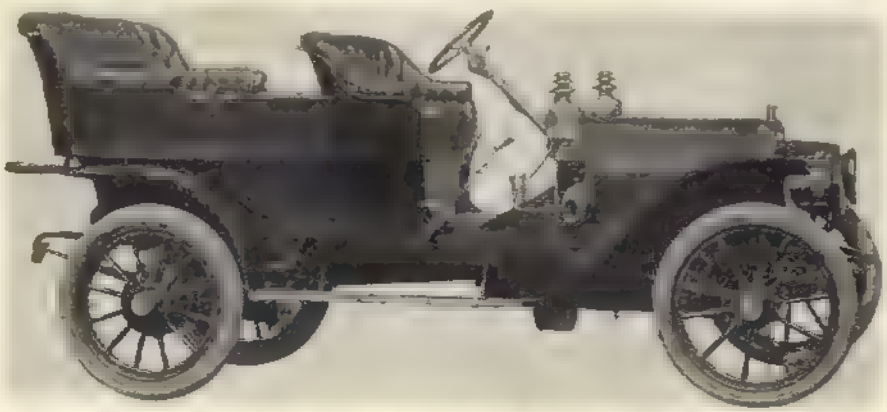
To date the company has put out nearly 2500 tubular front axles with not even one single instance of failure of the body of a tubular front axle. The Wayne Company sold in 1906-7 about 200 I-section, steel, drop forged front axles, all drop forged in two pieces and electric welded in the middle. Up to August, 1906, seven of the electric welded axles had failed at the weld, and at that time electric welding was abandoned, and all forged axles used thereafter were hand welded in the middle, with no more axle failures reported.

But the fact that no steel tube Wayne axle ever failed, and the consideration that the I-section axle is stronger up and down than it is sidewise, while the steel tube has equal strength to resist stresses in any direction, and also that the motor car axle is liable to very heavy work sidewise, has led the Wayne Company to return to the exclusive use of the tubular steel front axle with applied drop forged, steel, stub axle yokes and applied steel casting spring pads.

For 1907 the Wayne cars had the sliding gear box combined in an integral, aluminum alloy casting with the bevel gear housing of the rear axle. This gear, 6-8, chrome nickel steel, tempered, selective change, has given satisfaction, and is retained for 1908.

The Wayne 1907 motor, four, 4-cycle, water-cooled, 4½x5¼-inch cylinders is retained, with only a few changes of details.

The 1907 wheel base, 107 inches, is retained for 1908, and the same wheels, with tires 34x3½ inches front and 34x4 inches rear, are also continued. The front wheels are on ball bearings, and the rear axles are on Hyatt roller bearings, rear



[illegible] Wayne [illegible] touring car. [illegible] wheel base, [illegible] inches, [illegible] with two outside hand levers, [illegible] middle of 1908 practice. The two Wayne features making [illegible] from the [illegible] are combining the [illegible] and the change gear [illegible] the [illegible] all [illegible] the more ordinary [illegible] passengers and the usual two seats are in front. Weight [illegible] 240 [illegible] 5 lamps, mats, horn, tools, gas generator and [illegible]

wheels retained on the tapered axle ends with keys and nuts, all the same for 1908 as in 1907, these important details having proved wholly satisfactory.

The springs and chassis frames are continued unchanged, as are the Blood Brothers universal joints, and the right and left screw thread steering gear.

The Wayne factory, of which the rear portion only was erected in 1906, has now been completed according to the original designs, and is of brick, 60x427 feet three stories high.

The company will put out about 500

cars for the season of 1908, of which present outlook about 400 will be 5-passenger touring cars and 100 will be runabouts with 3-passenger bodies. Both styles of body will be placed on the one single form of chassis. The proportionate numbers of the touring cars and runabouts may be changed after the early show, the Wayne management highly approving the advancement of the show date, which will enable the production of cars in time to fill early orders with certainty.

The 1908 5-passenger touring car has 107-inch wheel base and 56-inch gage. The tires are 34x3½ inches front and 34x4 inches rear. The motor is four, four-cycle, water-cooled, 4½x5¼-inch cylinders, rated at 35 H. P. at 1100 R. P. M.. The three speed forward and one reverse sliding gear change speed is in a box integral with the bevel gear housing on the rear axle. The tonneau doors swing to the rear. The car weighs about 2400 pounds, and sells for $2500, including an equipment of 5 lamps, mats, horn, tools, gas generator and cape top.

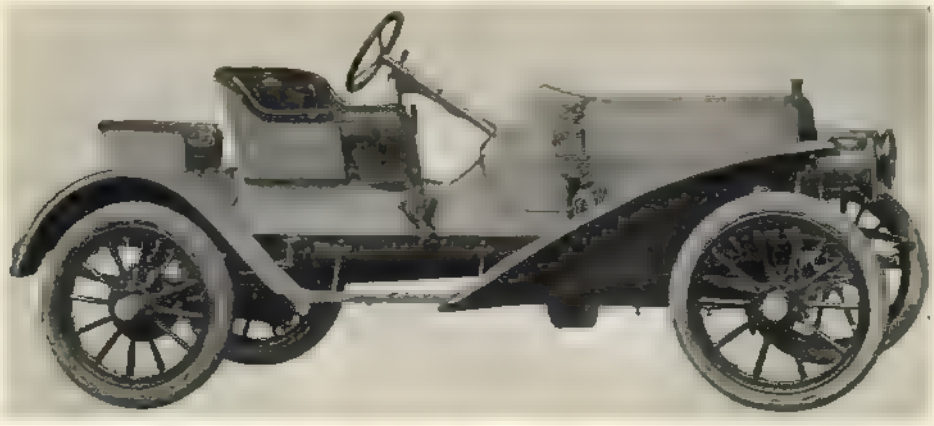


Fig 1. Wayne 1908 three passenger Runabout, same chassis specifications thruout as Fig 1 Wayne 1908 five-passenger touring car, will [illegible] Weight about 2200 pounds. Price, including 5 lamps, mat, horn, tools and top, all ready for the road $2500.

The 3-passenger runabout has the same chassis specifications, weighs about 2200 pounds, and sells fully equipt for $2500, the same as the touring car.

NOTABLE FEATURES

The Wayne cars from the first have been well upholstered, finely finished and presented a good appearance, and yet were offered at a fairly moderate price. The chassis design has a very clean appearance, owing to the placing of the change gears in the bevel gear housing, and this omission of the gear box between the clutch and the rear axle gives a low cardan shaft angle. The universal joints are by Blood Brothers, which have given entire satisfaction in the Wayne cars of past years. Radius rods are not fitted. The torsion arm is long, with a large diameter steel tube body, and the front end of this member is between substantial top and bottom coiled springs of good length. The chassis least road clearance is 9½ inches. The front axle is an original Wayne design, as is also the rear axle. The speed change gears are chrome nickel steel, oil tempered. The bevel gears are of the same material, pinion tempered, bevel gear thrusts taken on ball bearings. The balance gear is spur, 12 pinions. The front wheels are on two circles of balls, ⅝ inch diameter inside and ½-inch diameter outside. The rear axles are on Hyatt rollers

The chassis frame is of prest steel 3-16 thick, 4 inches greatest side frame depth. The whole chassis is designed with a view of obtaining the most reliable construction thruout, at a comparatively moderate cost, and to this end no component not of indisputable value appears in this construction. Whatever is essential and necessary is present, and is good, well finished and durable. What is of doubtful utility is simply left out

THE FRAME AND BRAKES.

The frame is prest steel 3-16 inches thick, 4 inches greatest depth, 1½ inches wide, 148½ inches spring eye to spring eye. All one width, 32 inches. The radiator is carried on a heavy, channel-section, front cross-girt, dropped 4 inches below the chassis frame top. The brakes are exterior and interior on and in a prest steel drum, 12 inches outside diameter. The exterior band, 3-hole lever applied, is 2 inches wide, lined with camel's hair felt. The internal expanding brake shoe is two members, jointed, toggle expanded and faced with camel's hair felt. Both brakes give the same action, running forward or backward.

THE MOTOR

The pistons are 4½ inches diameter by 5¼ inches stroke. The valves are all on one side, one cam-shaft. The cams are applied to the 1-inch diameter cam-shaft and fixt with one taper pin in each. The

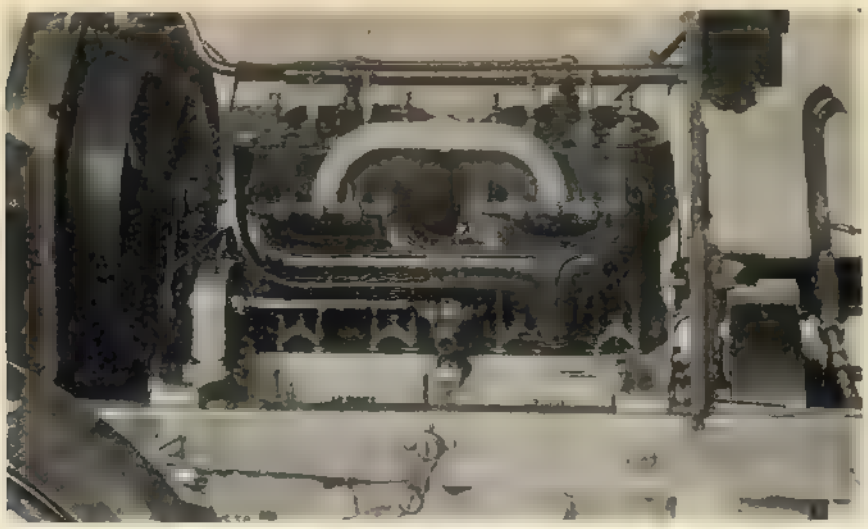
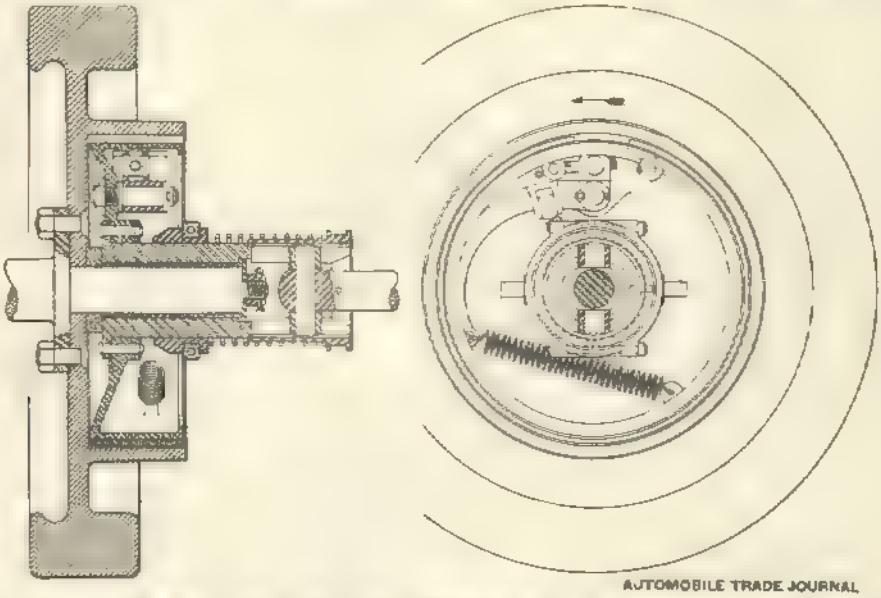


Fig. 3. Left side of Wayne 19-S Motor. The cylinders, 4½ inches, are cast in dual units. The valve gear is driven from the gear shaft. The whole motor design is good, and the way

valves are all the same, nickel steel, heads and stems integral, ports all 1⅝ inches diameter. The water jackets, including tops, are integral with the cylinders and the water piping is copper brazed in two members, with a length of rubber hose to the radiator on top and from the radiator to the gear-driven, two-pinion, water-



AUTOMOBILE TRADE JOURNAL

Fig. 4. The Wayne 19-S Clutch. This company adopted the internal fiber-faced, expanding shoe type of clutch, which is locked up by the pedal, with a diameter of 8 inches. For the Wayne keyless it is the same form, but increases the clutch-drum diameter to 10 inches.

This clutch is normally engaged by the pull of a coiled spring on the long arm of a bell crank lever, short arm pushing to free end of the fiber-faced flexible shoe, fixt at the motor end, leaving the opposite end free. A metal tube, sliding on the shaft which receives toward this applied end, so that the tube when pushed by the pedal on. In this action the clutch spring has only to establish the shoe friction, and the rotation of the clutch drum does the rest, so that a 20-pound spring tension suffices. The curved bell crank arm carries the disengaging roller in a fork. The tube is pushed outward by advancement of the pedal actuated clutch cone, apparently working thru an intermediate member not fully shown in these illustrations. The operation is to lift the curved bell crank member against the spring tension, and so collapse the clutch shoe, which withdraws from contact with the internal clutch drum face during disengagement.

Pedal engagement gives a perfectly controlled slipping drive which gives slow pace on high gear with the motor running fast enough to take advantage of an opening in crowded traffic.

circulating pump below; no governor is used. The motor shows 35 H. P. at 1100 R. P. M

The ignition is jump-spark with storage battery, and a four-coil box on the inside of the front board. The five lead mechanical oiler is carried on the right hand front lug of the motor base. The motor-base and oil basin are aluminum alloy castings with base lugs reaching across the chassis frame to hook over the chassis frame sides, each lug fixt to the chassis frame with a single bolt passed thru a loose distance block placed in the frame side channel. The five oil leads are carried, one each, to the 3 crank-shaft bearings, one to the crank pits and one to the change gear line shaft in the gear box on the rear axle. The piston and rod lubrication is by splash

retained levers at the left hand side of the post under the steering wheel. There are two vertical hand levers; the outer one, ratchet retained, when pulled backward first disengages the clutch, and then applies the external, emergency, rear hub-drum brake shoes. The inside lever is in an H-slot and works the gear shift.

There are two large pedals, the left pedal being pushed forward to release the clutch only. The right pedal is pushed forward to apply the rear hub-drum, interior, ordinary brake only, and is not interlinked with the clutch. A horizontal accelerator pedal regulates the throttle position. There is no muffler cut-out fitted

THE FRONT AXLE.

The front axle body is a 2-inch diameter steel tube, walls 5-16 thick, dropt 3 inches

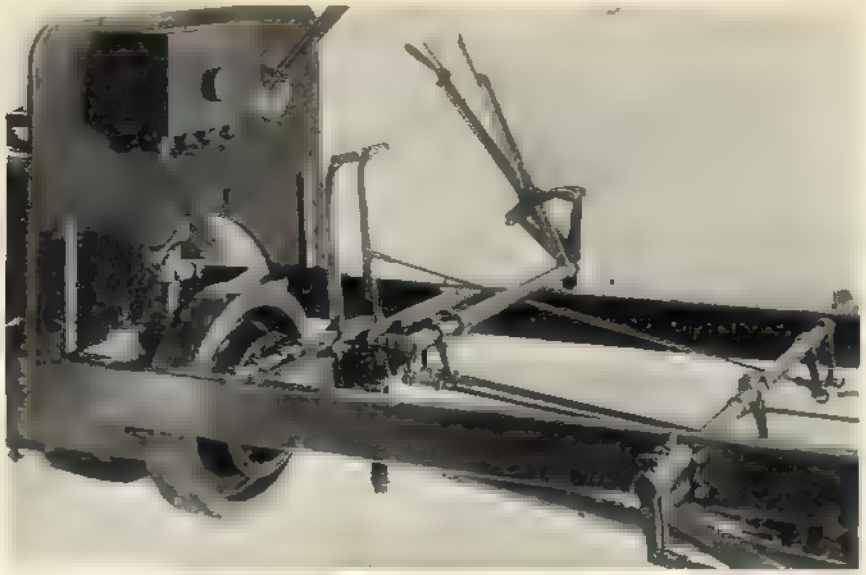


Fig. 6. Wayne 1908 chassis front board and control. Everything is so fully shown as to need very little description. The three rockers are well placed and well supported, and the connections are all forked with screw adjusted rod lengths. The absence of the gear box from this assembly makes a very clean, open and readily reached construction all thru.

THE CLUTCH

The clutch is an internal cylindrical drum, 10 inches diameter by 3 inches face. The internal bell-crank-and-spring-expanded brake shoe is leather faced. The spring, 20 pounds tension only, takes hold of the long arm of the bell crank and is jointed to the "meeting" end of the expanding shoe, so that the clutch "bite" is aided by the direction of fly wheel revolution.

THE CONTROL.

The steering is by right and left screw threads and nuts actuating a double bell crank, globe ended, steering gear. The hand wheel makes 1½ turns for the full sweep of the front wheels. The spark and throttle are controlled by two rockers parallel to the steering post, worked by ratchet-

in the middle. The steel casting spring pads are fixt in place by pinning and brazing. The stub axle yokes, steel drop forgings, 6¼ inches opening, slip 3 inches onto the steel tube ends, and are retained by pinning and brazing. The front axles are 1⅛ inches large diameter, and the front wheels are on circles of ⅝ inch steel balls inside and ½ inch diameter outside, all 3-point adjustable bearings. The stub axle pins are ⅝ inch diameter, hardened and ground, in hardened and ground bushes, and the load is carried on hardened and ground bush flanges.

THE REAR AXLE

The rear axle steel tubing is 2⅝ inches diameter, 3-16 wall thickness. The brake supports are steel castings, forced on the axle tube and pinned. The revolvable,

rear spring pads are in halves, bolted together, and retained endwise between the brake support hub and the hub of the pinned and brazed, steel casting, gear housing flange to which the aluminum alloy gear housing and gear box members are fixt by bolting. The side and line shafts are in Parson's white bronze bearings, and the bevel pinion is on Timken rollers. The spur balance gear has 12 hardened pinions. The bevel gear is on Hyatt rollers with ball thrust bearings. The divided rear axles are 1⅝ inches diameter. The bevel gear is 10¾ inches pitch diameter, 4 D. P., 1½ inches face. The springs are all half-elliptic, all jointed to the chassis frame in front and linked in the rear. The front spring is 38 inches long by 2 inches wide, 7 leaves, tongued, grooved and banded

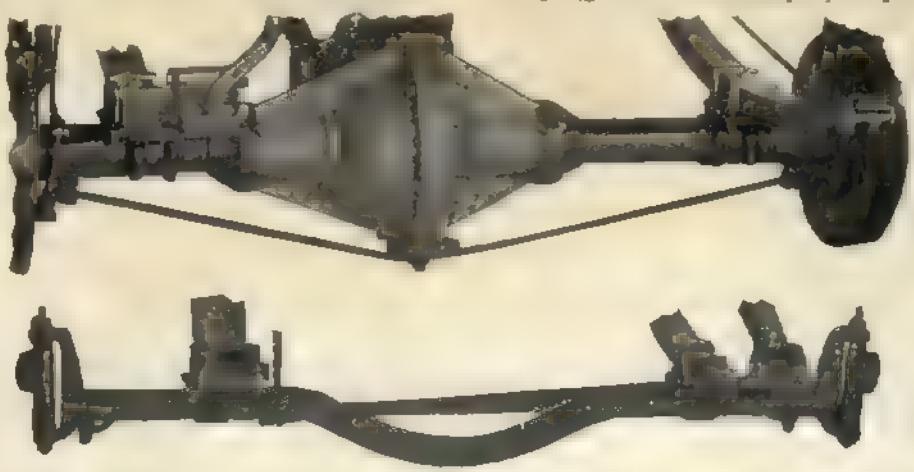
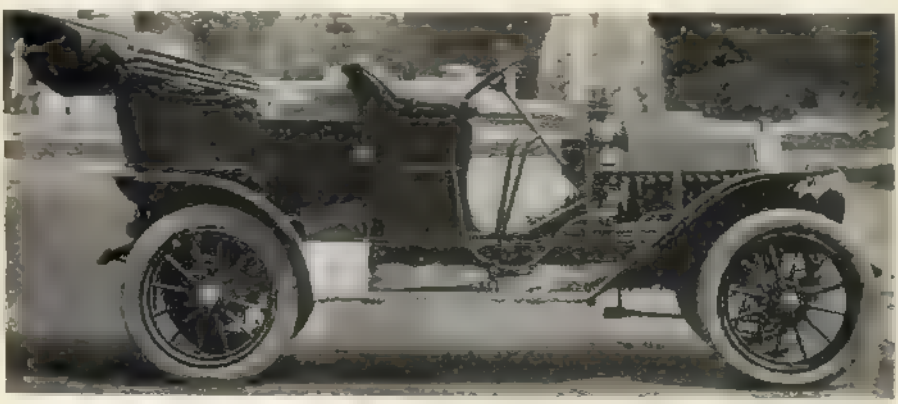


Fig. 5. The Wayne front and rear axles. The Wayne had some fame as of I-section front axles but [illegible] and has gone back to the tubular steel [illegible]. It is throw-back stands on solid [illegible] and seems likely to have plenty of company. The tubular axle is best suited to resist stresses in all directions and will probably [illegible] large and increasing favor. The front wheels are on ball bearings

1908 Autocar Changes

The Autocar Company, of Ardmore, Pa. has made practically no changes in the mechanism of the 1908 models, the changes which have been made being in connection with body design and equipment. An entirely new model, the Type 14, 35 H. P. roadster, is offered. This new model conforms to the lines of the popular rumble seated roadsters, but uses with slight changes the same chassis as the Type 14 touring car; both cars have 112-inch wheel base, standard gage, and are powered with the same four-cylinder, 4¼x4 inch, 30-35 H. P. engine, as used last year. The price for each is $2750

The popular Type 15, two-cylinder opposed 4x4 inch 12 H. P. runabout, known as the "Doctor's Car" has been continued without change except for equipment.



1908 Type 14 Autocar, showing the [illegible] the [illegible] cover shield between the running board and body, and the aluminum [illegible] as a step. The wheel base is 112 inches. The price is $[illegible]. The rear [illegible] was illustrated in our September [illegible] issue page 64

THE ROADSTER

The chief deviation of the roadster from the touring car are as follows: The dash has been moved four inches further to the rear, and carries nothing but the coil, fol-

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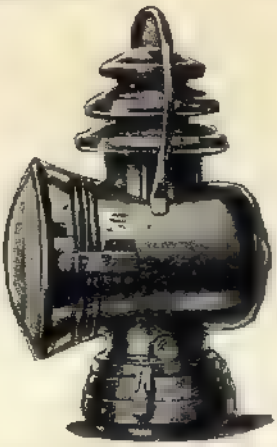

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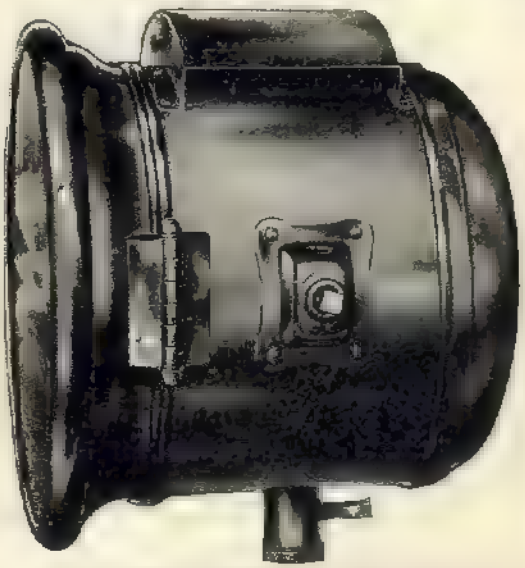

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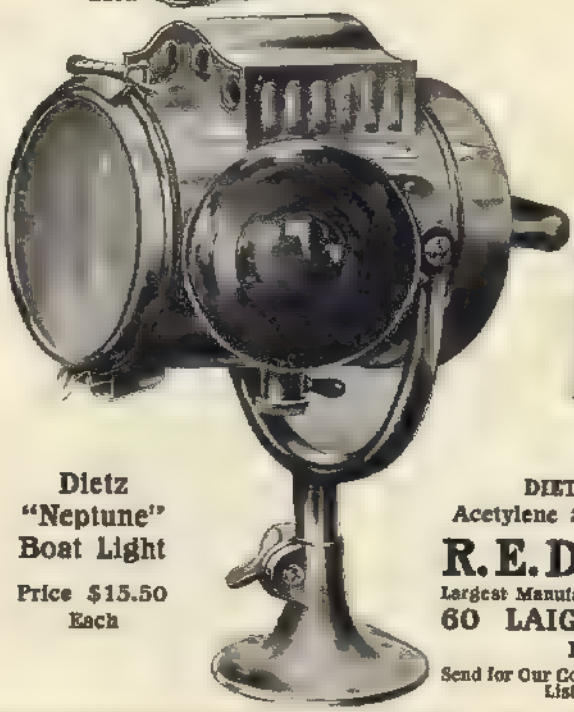

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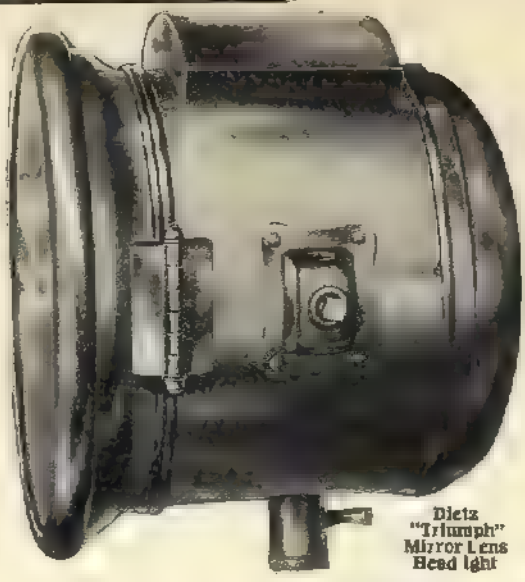
1908 Models of "Flare Front" HEADLIGHTS



Dietz "Triumph" Mirror Lens Head light

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7 inch	9.00 "
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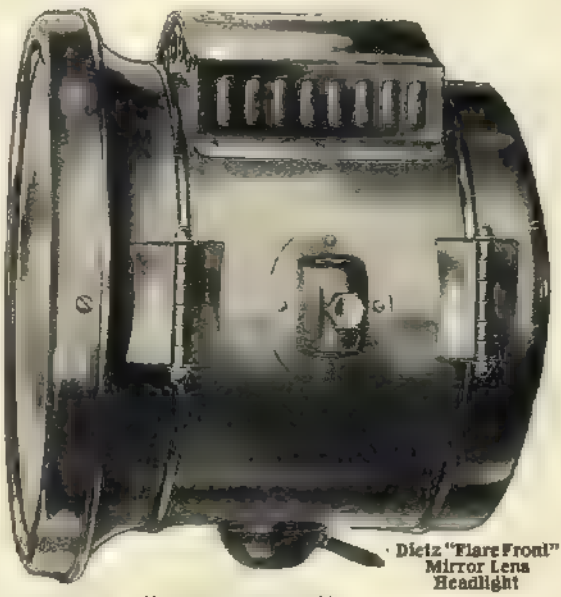
Equipped with Bausch & Lomb Mirror Lens.

Note hinged front and back for easy cleaning.



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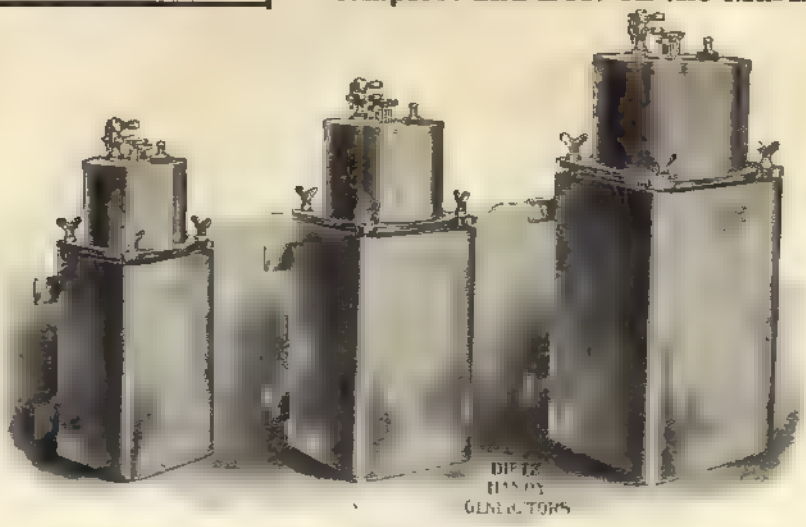

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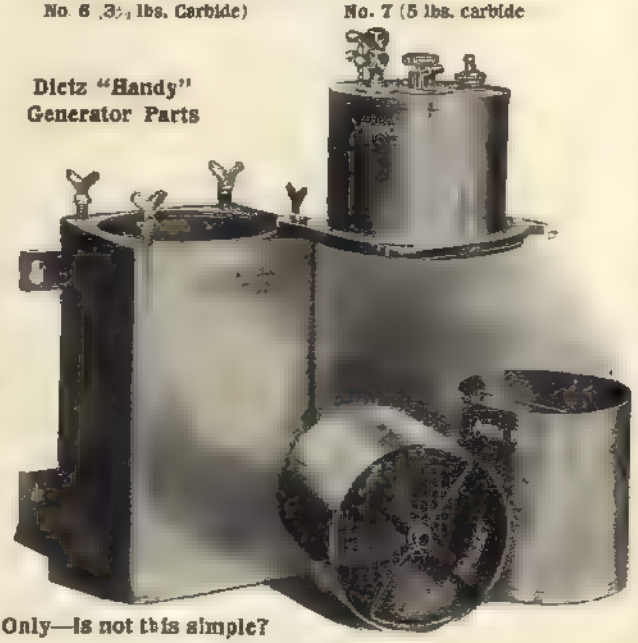

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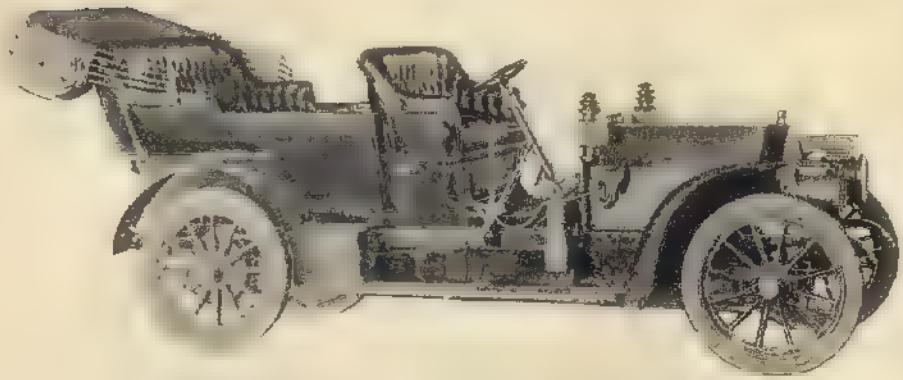
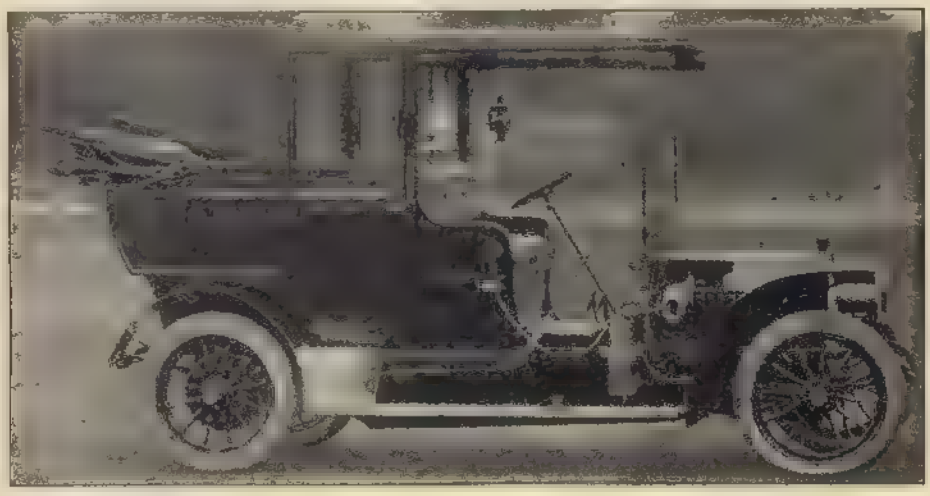


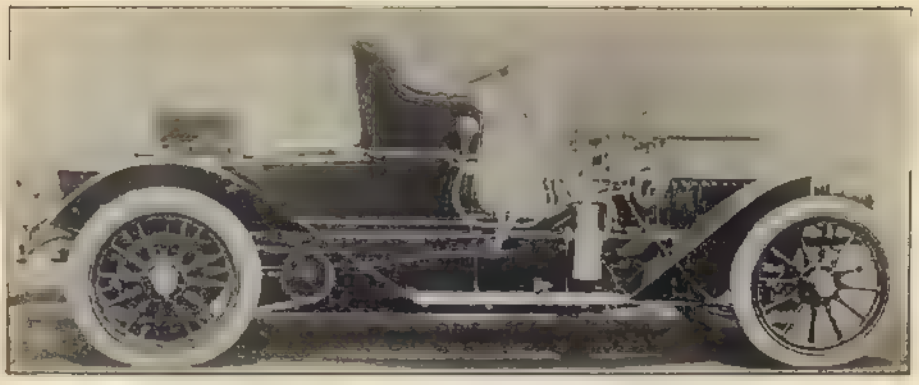
The 1908 Standard Type I, 40-H. P. Locomobile with touring body

Two Locomobile Models for 1908

Already the season of 1907 has been relegated to the past at the great factory of the Locomobile Company of America, in Bridgeport, Conn., and all hands are living and working in 1908. In other words, the last 1907 car rolled away to its owner long ago, and the busy shops are rapidly turning out 1908 models, the first trial machines having been on the road under test for many months before manufacturing was commenced. The company has adhered to its policy of building two models; these are practically identical in their mechanical features and general design, the main difference being in the matter of dimensions and power. The smaller machine, designated as Type E, is rated at 20 horse power, while the larger car, Type I, has a 40 horse power motor. In both cases the design is the same. Both cars have 4 speed selective transmissions, make and break ignition, double chain drive; the materials and workmanship being identical. Each chassis may be had as a runabout, a touring car, a limousine or a landaulet. The smaller machine, Type E, can be furnished with a removable tonneau which is interchangeable with a rear deck or boot carrying a rumble seat, which folds down and out of sight when not in use, and a capacious box just behind the rumble seat in which no small amount of touring requisites can be stowed. The fastenings consist of wing-nuts, so that no tools are required for changing over from touring car to runabout, or vice versa; two men can readily make the change in twenty minutes. When either the rear deck or the tonneau is in position there is nothing to indicate that it is not permanently attached to the car; even a close inspection does not betray the interchangeability of the body. In the case of the larger car, Type I, the same scheme may be employed. It also has the folding rumble seat and, naturally, more stowage space than the 20-horse power runabout. An aluminum dash of the dished type is fitted to the



20-H. P. 1908 Locomobile, fitted with Landaulet body. When closed this top forms practically a limousine. This machine is now equipt with a 4-speed selective change speed gear. Wheels 32 inches with 4-inch tires. Rear springs 44 inches, front, 30 inches. Wheel base, 102 inches.

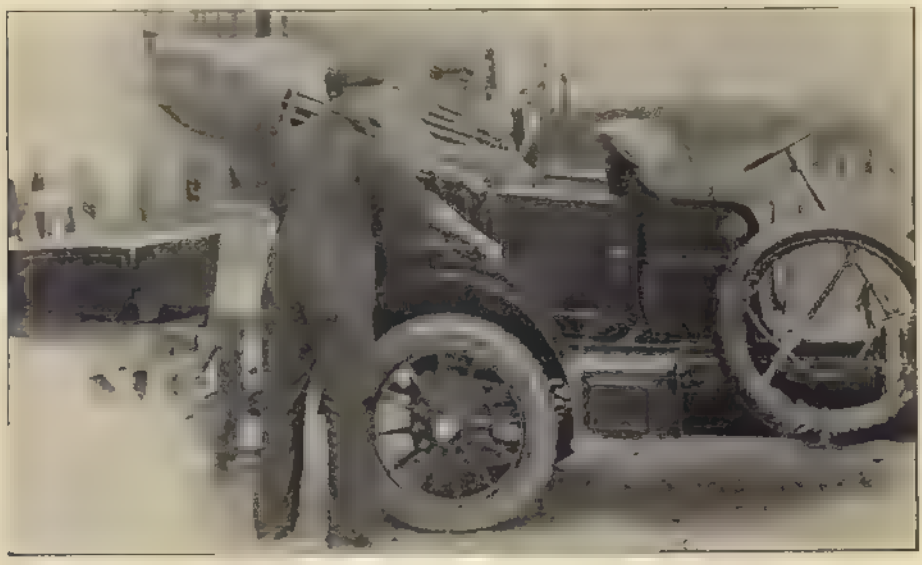


1908 40-H P Locomobile, as a runabout. The 1908 bodies can be removed and replaced by a landaulet or limousine body

smaller car when equipt as a touring car or runabout, but with a limousine body a straight mahogany dash is employed The 40-horse power chassis always takes a mahogany dash, regardless of the style of body

An interesting feature of the 1908 20-horse power car is that it is equipt with a four-speed selective change-speed gear, similar to that used on the larger car, but of smaller dimensions. In the 1907 model there are but three speeds, controlled by a progressive lever. The four speeds make the car an extremely handy one to drive, especially in a hilly country, as it is possible to keep the engine running at the most advantageous rate of speed under any condition of grade or road surface, and to secure the most economical operation and the greatest speed obtainable from the horse power.

The description that follows may be taken to apply equally to both models, except where exceptions are specifically noted. In fact, it is a difficult matter to distinguish one chassis from the other except by comparison of dimensions, and this similarity extends also to the unseen parts and to the methods of construction employed thruout. The cylinders are cast in pairs, as heretofore, and are mounted on a manganese bronze crankcase, a method of construction that has given satisfaction after several years' use. A new feature for 1908 is the use of a bronze plate to close a large opening in the head of the water jacketing; the uptake for the water circulation is connected thru this cover-plate, the removal of which gives free access to the water jackets for cleaning and inspection. Valves are all mechanically operated and symmetrically arranged on opposite sides, inlet valves on the right. Each camshaft is made from a single bar of steel, cams integral, so that there is absolutely nothing to work loose or give trouble The cam



1908 Locomobile showing the method of quicklychanging from one type of body to another. 20-H. P Model being converted into a runabout.

shaft operating the inlet valves also carries the skew-cams for the make-and-break igniters; these are of the type that has been used in all Locomobile gasoline cars and are too well known to require description. The time of ignition is varied by sliding the camshaft lengthwise and so bringing different parts of the varying profile of the cams under the trip-rods. The gears operating the camshafts are housed in a dustproof aluminum casing bolted to the front end of the crank case. Each of the camshaft gears drives another gear, the one on the inlet side rotating the magneto used to furnish the ignition current and the other driving the centrifugal circulating pump.

In the 20-horse power car the magneto is the only source of current used, the engine being readily started without batteries. In the larger car, however, storage batteries are provided as a part of the standard equipment in order to facilitate cranking. Compression relief cams are also employed in the large engine, being formed integrally with the exhaust cams and acting, of course, on the exhaust valves. The magneto is of the low-tension type, the same as used in the 1907 models, and is secured by a strap-and-bolt arrangement, but the bolt is now on top instead of at the side. A flexible coupling has been placed on the pump shaft to insure against binding and to make it an easy matter to remove the pump. The pump shaft carries a flanged pulley for the fan belt.

Warm air for the carburetor is drawn in thru holes in flanges cast on the exhaust manifold—a new feature. The air pipe extends across the engine between the pairs of cylinders to the carburetor on the inlet side; a valve regulates the volume of warm air admitted, this valve being close to the exhaust manifold. The carburetor, placed low down on the inlet side, is practically the same as the 1907 model, being of the float-feed type, but fitted with a new style automatic air valve. A centrifugal governor, acting upon the throttle which is incorporated with the carburetor, regulates the speed of the engine, but the speed can be increased beyond the rate permitted by the governor by the use of the foot-operated accelerator.

OILING SYSTEM

A mechanical lubricator, driven by a steel belt from a pulley on the rear end of the exhaust camshaft, is placed under the sloping footboard and just over the exhaust pipe, whose heat keeps the oil in a condition to flow easily thru the pumps and pipes. "Tell-tales" on the dash enable the driver to know just how the oil is running. A hand pump is provided for use in case an excess of oil is required temporarily, or for emergency use. On the 40 H. P. model an extra oil reservoir, holding 14 pints, is hung on the frame and connected by a pipe to the lubricator tank. If the oil in the lubricator becomes exhausted a fresh supply can be pumped up from the auxiliary tank. This arrangement is infinitely more agreeable than the familiar plan of carrying a can of oil in the tonneau, or strapt to some part of the car. This arrangement is omitted from the smaller model, which carries one gallon of oil, enough for several hundred miles, as the company claims a record of over 500 miles on one gallon of oil for this car.

Chassis of the 40-H. P. 1908 Locomobile. The 20-H. P. car is practically the same, except for dimensions. Power plant and radiator well back giving good weight distribution. Wheels, 30 inches, rear tires, 4½ inches, front, 4 inches. Rear springs, 50 inches long and front, 40 inches. Wheel base, 123 inches.

MANUFACTURING METHODS

In the manufacture of the engine a number of interesting processes are employed, some of which are extremely simple, notwithstanding their effectiveness. For instance, piston rings are so finished that when placed in their cylinders they fit as closely as if they had run long enough to become worn to an exact bearing surface. This is accomplished by placing the rings, after they have been ground in a regular grinding machine with a magnetic chuck, in a holder that retains the rings exactly as a piston does. This is put into a cast iron cylinder bored and finished like an engine cylinder.

1908 Locomobile 30 H. P. Motor. Inlet side, showing the make and break ignition system, the band method of holding the magneto and the special oil can holding bracket.

and worked back and forth, just as is the piston in the engine, with a little abrasive substance to remove the irregularities from the rings. As a result of this process the rings are worn exactly as they would be worn by actual use in service, and when they are assembled into their engine they fit closely and hold compression as well as if they had been run for some time. Another result is that they remain tight for a long time. It is, of course, necessary to renew the grinding cylinders at frequent intervals, as they are quite rapidly destroyed; but this is found to be well worth while, in view of the good results obtained from the process.

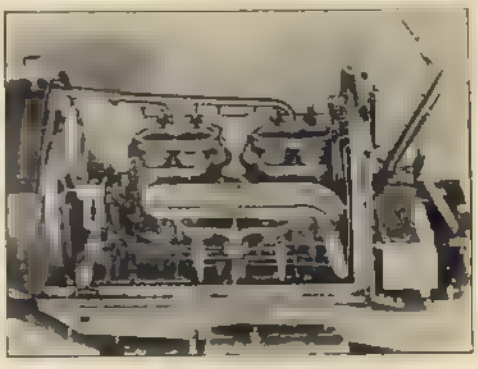
After leaving the grinding machine on which the preliminary work is done the rings are magnetized, thanks to the magnetic chuck in which they are held, and in this condition would be sure to attract and hold small particles of metal. There would consequently be unnecessary wear on the cylinder walls, piston rings and pistons, and under some circumstances this might become very serious. A simple demagnetizing apparatus has been installed, however, and this, when brought into use, leaves the rings as free from magnetism as they were before grinding, removing the possibility of trouble from this source.

The connecting rods are of high-carbon, open hearth forged steel, the solid wrist-pin ends bushed with hardened steel and the split big ends lined with Parsons' white brass. It has been the custom at the Locomobile factory, to bore out the big ends in a boring machine, and then fit each one to its own crank pin by scraping. While this method was good, a better one has been evolved. The bearings are bored a shade smaller and a mandrel of highly polished and hardened steel, very slightly tapered and of the exact size of the crank pin at its largest part, is forced thru the big ends, a special press being used for the purpose. The passage of the mandrel expands the opening to the precise size required, and, at the same time, compresses the metal and slightly hardens it at the surface, and produces a polish or glaze that is exactly the same as the glaze acquired after running for some time in the engine. The bearing, after this process, fits its accurately-ground crank pin better than a scraped bearing, and the surface is in far better condition, both for smooth running and for resisting wear than a scraped or machined bearing. Actual tests made before this plan was adopted showed that bearings that were mandrel-finished wore longer and better than scraped bearings. The main bearings of the crank shaft, which are also lined with Parsons' white brass, will be finished in the same way. The crankshaft is machined from a solid hydraulic forging of alloy steel.

CLUTCH AND CHANGE SPEED GEAR

The clutch is a simple cone of ample diameter and width, faced with heavy leather backed by flat springs; the springs cause the clutch to take hold gradually, starting the car without jerking and jumping and not only making the car pleasant to ride in, but also saving wear and tear on the engine and transmission mechanism. Spring thrust is self-contained when the clutch is engaged. The universal joint between the clutch and the gear box is made up of steel forgings, hardened and ground; the pins are stationary, held in position by bolts with castellated and cotter-pinned nuts, and the bearing surface extends nearly the full width of the knuckle.

The gearbox is made of manganese bronze, with cover-plates of aluminum composition, and all the gear shafts run on Hess-Bright ball bearings. A rearward extension of the main casing contains the differential and the bevel gears driving the countershaft, which also turns in ball bearings.. There are two sliding groups on the squared shaft, one having two gears for first and second speeds and the other a gear and a clutch for the third and fourth speed respectively, the drive being direct on the high speed. On the right hand side of the gear case the countershaft carries the drum for the foot brake. This drum on the 20 H. P. car it is ten inches in diameter and three and a half inches wide. On the Type "I" car it is 12x4 inches. The brake is operated by a foot lever, in the usual way; lubrication of the large metal



1908 Locomobile, 40-H. P. Motor. Exhaust side, showing water piping, air openings in exhaust manifold for supplying warm air to the carburetor, and oil tank under the foot board.

surfaces is afforded by a self-feeding grease cup. The outboard ends of the countershaft run in ball bearings; the countershaft sprockets have hardened teeth. The chains are of the roller type, of ample width. The rear sprockets are formed integral with the steel brake drums, the whole being bolted to the enlarged spokes of the rear wheels. The emergency brakes are of the internal type, and are entirely inclosed. Sizes are as follows: Type "E," 11x1¼ inches; type "I," 14x2. Steel cables form the connection between the lever and the brakes. The lever oscillates a transverse shaft and a short arm on each end of the shaft carries the front end of the cable thru which it is connected with its brake. The total braking surface of the Type "E" car is about 220, and of the Type I car about 320 square inches.

AXLES AND STEERING GEAR

Both front and rear axles, in both cars, are of forged steel, of I-beam section, and both are dropt, the rear axle being "cranked" near its ends and the front axle having a graceful downward sweep at the center. Spring seats and, in the case of the front axle, the steering yokes, are forged integral with the axles, so that each is in a single solid forging. The steering yokes and pivots, upon which so much depends, are substantially designed. The transverse rod connecting the steering pivots is placed behind the axle, where it is protected from accidental damage, and conforms to the sweep of the axle. The joints are of the ball-and-socket type, with spring buffers to absorb shocks, and are inclosed in leather boots, which exclude dust and dirt and retain lubricating grease. The steering gear is of the worm and sector type, both worm and sector being glass hard, and by means of an eccentric bushing on the sector shaft wear can be taken up, obviating any back lash which may develop after long use. Spark and throttle levers are mounted on top of the steering wheel, but do not move with the wheel. Their movement is carried thru the steering tube by means of smaller concentric tubes carrying at their lower end small bevel gears meshing with similar gears on the lower ends of short vertical shafts whose upper ends carry the levers thru which the throttle and spark are controlled. The hand wheel is of bronze with a rim or grip of black vulcanized hard rubber moulded over the bronze, making a handsome, durable and comfortable rim to use.

The frame is of prest alloy steel thruout, and the cross members to which the transmission is hung are deep and substantial. The rear ends of the main frames are connected by a steel bar passing thru holes in the end forgings; the outer ends of these bars carry the spring shackles. At the front end of the frame is a dropt member or cradle in which the radiator is carried, not being dependent upon the side frames for direct support, the radiator is not subjected to twisting stresses, and its life and welfare are considerably enhanced by the arrangement.

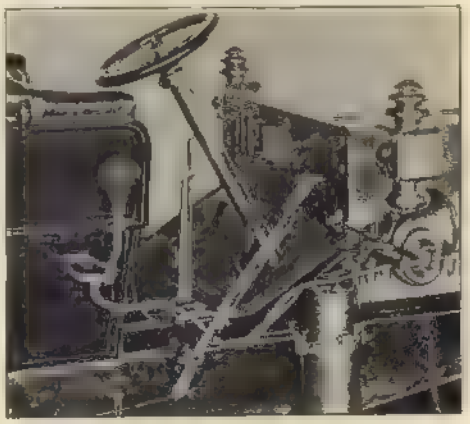
A point that is of interest is that the front wheels are carried well forward—or, to put it another way, the power plant is well back so that the front of the radiator is a trifle behind the center line of the front axle. This results in a good distribution of the weight, makes the car handle well and adds not a little to the comfort of the passengers. Semi-elliptic springs are employed thruout.

WHEELS AND TIRES.

On the large car, Type I, the wheels are thirty-six inches in diameter, front and rear; the rear tires are four and a half inch and the front tires four inch. The rear springs are fifty inches long and the front springs forty inches. On the smaller car, Type E, the wheels are thirty-two iches in diameter, front and rear, and both front and rear tires are four inch. Rear springs are forty-four inches long and front springs thirty-six inches. The wheel bases are a hundred and twenty-three inches and a hundred and two inches respectively for touring cars. When Type E is built as a limousine, however, the wheel base is increased to a hundred and sixteen inches, fourteen inches longer than the touring car. All wheels run on ball bearings.

FORGING AND HEAT TREATMENTS.

All drop forgings used in the Locomobile, approximately 200 together with the drop dies, are made in the company's own forging plant, which is in itself a manufacturing plant of no small magnitude. After forg-



1908 Locomobile showing the rear of the dash and the control levers and pedals. Practically no changes have been made in the control of the large car and a 4-speed selective system of change speed gearing to the large car has been installed in the 20-H. P. model.

ing, the parts are subjected to delicate heat-treating processes by which the strength is enormously increased and each is given the proper hardness for the work it is to do. Some parts, such as gears, are given a final heat treatment after being finished, as cutting would be out of the question after the hardening process. Owing to the very sensitive character of the alloy steels used it is necessary to regulate the heating with the

utmost accuracy; therefore the heating is done in oil furnaces whose temperature is indicated by pyrometers. Oil is also used as fuel in the annealing furnaces. The magnitude of the plant involved in the making and heat-treatment of forgings can be judged from the fact that the consumption of oil for fuel amounts to a thousand gallons a day. All forgings are pickled in acid, and subjected to a sand blast and then hand filed.

All finished parts are sent to a testing department before being assembled, and are subjected to minute tests for accuracy, vernier instruments and micrometers being employed, together with special testing machines for special parts. Errors of more than a thousandth part of an inch result in the part being sent back to be made right; or, if the error cannot be corrected, the part is "scrapt." One of the most intricate pieces of work in the whole establishment is the cutting of the camshaft for the inlet side, with its eight cams—four for the valves and four for the ignitors—the latter with their varying contour. A special machine for this work was designed and built at the Locomobile factory, and is almost human in its weirdly automatic action

The difficulty of making paint stay on the hood, which is often hot, and the mudguards, which are subjected to a great deal of vibration, has been met by baking on a special enamel which makes a permanent foundation for the finishing coats of paint and varnish. The color put on the car in the paint shop is optional with the purchaser.

In outward appearance, generally speaking, the 1908 Locomobile cars resemble 1907 models, altho the Type "E" car is somewhat altered. There are no sweeping changes in either model, the most important departure from 1907 design being the substitution of a four-speed selective gear in Type E for the three-speed progressive gear used in the 1907 car and a much larger engine in the large car. The sprocket boxes, forming steps leading into the tonneau, have been worked out a little differently as to outward form, looking neater and at the same time occupying less space. Square side lamps will be standard equipment instead of round ones. Another detail is a new coat rail which, when not in use disappears in the top of the front seats. The equipment includes five lamps, generator, horn, tools, spare parts, top irons, tire carriers and foot rest.

The 1908 "Griswold" Cars

HUGH DOLNAR.

The Griswold Motor Car Company, Detroit, Michigan, U. S. A., placed the first one of its cars on the road early in May, 1907. This car is unique in having a vertical motor crank-shaft and a symmetrical friction drive, and is here illustrated and described in some detail for the first time in any publication.

The Griswold cars are built from designs by Mr. Joseph P. La Vigne, widely known as a machine-tool designer and builder and to the motor car trade as the inventor and patentee of the La Vigne oiler.

He had his first motor car on the road at New Haven, Conn., in 1899. The wheel base of this car was 65 ins., gage 56 ins., tires

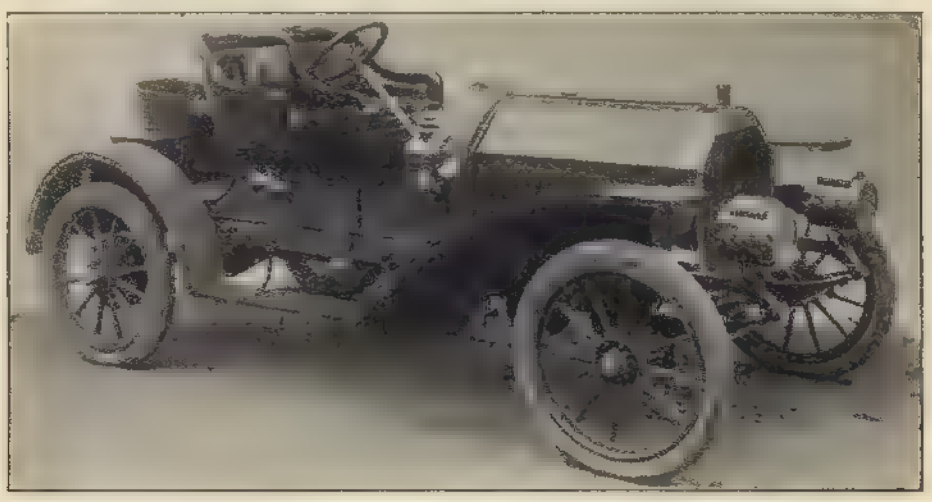


Fig. 1. The Griswold 3-passenger Roadster, wheel base, 100 ins; gage, 55 ins.; tires all 32x3½ ins., motor, two cylinders, water-cooled, 4-cycle, opposed, set lengthwise of the car, under the middle of the hood; crank-shaft vertical, with fly-wheel fixt to the lower end. Friction wheel placed in the middle under the fly-wheel, with bevel gear to the divided rear axles. Weight of car, tanks full, about 1900 lbs; Price $1500.00, including mats, horn, tools, 5 lamps and gas generator, ready for the road

The Rambler 1908 Cars

HUGH DOLNAR

Thomas B. Jeffery & Company, Kenosha, Wisconsin, U. S. A., builders of the Rambler automobiles, will offer one practically new car, the Rambler Model 34. In addition the Rambler 31, which is a greatly improved Rambler 1907, Model 21, will be marketed.

Of these two 1908 Ramblers, Model 34 will be fitted with a tonneau body to seat five passengers and a three-passenger runabout body, while the Rambler Model 31 will be supplied either as a detachable tonneau body, five-passenger touring car or as a two-passenger runabout.

The general policy of moderately priced production adapted to meet the requirements of the middle classes of motor car purchasers, which has carried the Jeffery establishment well to the front among the automobile makers of the world, will be continued, the four-cylinder, five-passenger touring car being listed at $2250, and the four-cylinder runabout the same, while the 1908 Model 31 is placed at $1300 as a two-passenger runabout and at $1400 when fitted with the detachable tonneau to carry five-passengers.

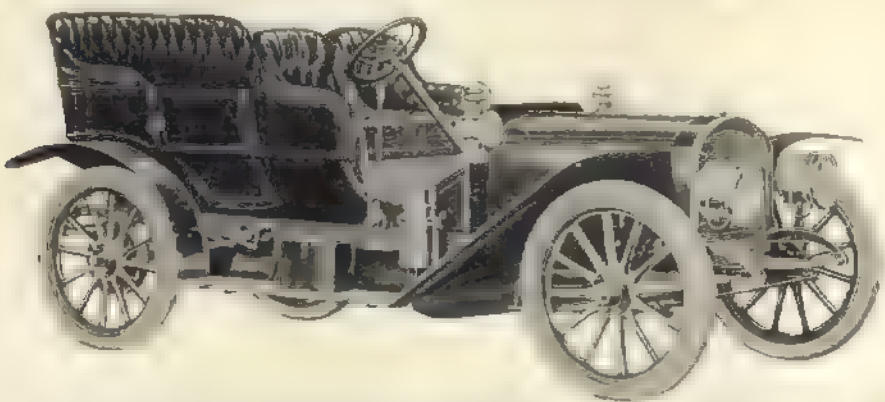


Fig. 1. The Rambler 1908 Model 34, five-passenger touring car, wheel base 112 inches, gage 56 inches, tires all 36x4 inches. Motor four water-cooled, four cycle, 4½x4½ inches, cylinders, nominal 32 H. P., selective sliding gear, three forward speeds and a reverse. Tonneau body side doors swinging to the front, to seat five passengers. Weight 2700 pounds, tanks filled. Price $2250, including five lamps, gas-tank mats, horn and tools, all ready for extended touring. Cape-top extra.

THE RAMBLER FACTORY.

The original Rambler factory had 70,000 square feet of workshop floor space which has been increased every year since that of the first sale, 1902, until it now covers 500,000 square feet.

The additions have been principally of saw-tooth roofed structures with concrete walls and floors, skylighted, which form to-day one of the largest motor car factories in the world.

Early in 1907, fully realizing the urgent need for the most complete information obtainable regarding the action of the small gas-engine, the Rambler Company established a testing department equipt with the most improved apparatus for ascertaining and recording the work done in the car-motor cylinder thruout its cycle of changes, and placed this most complete motor-testing plant in charge of a fully competent investigator, so that the entire performance of the Rambler motors is now fully known to its engineering force.

The Rambler orders for materials to be used in 1908 are not yet wholly placed, but the production will be about 3000 cars of somewhat more costly forms than in 1907, and the aggregate materials cost will be greater for 1908 than it was in 1907.

The Model 34 is a five-passenger touring car with 112 inches wheel base; 56 gage and 36 by 4-inch tires. The four-cylinder, vertical, water-cooled, four-cycle motor is 4½ by 4½ inches, with a nominal horse-power of 32. The change speeds are by selective sliding gear, three forward speeds and a reverse. The car weighs 2700 pounds with full tanks, and sells for $2250, including five lamps, gas-tank, mats, horn and tool. Tops are extra.

The three-passenger roadster weighs about 2350 pounds and sells for $2250. It is on the Model 34 chassis. The Model 31 has a detachable tonneau and will carry five. Its wheel base is 106 inches, gage 56 and the tires are 34 by 4 inches. The motor as in last year's model is an opposed pair of cylinders set lengthwise of the car under the body. The bore is 5 inches and the stroke 6 inches, the nominal horse-power being 20. A planotary speed change gear and chain drive to a divided rear axle are used. The car weighs 2100 pounds, and with five lamps, gas-tank, mats, horn and tools sells for $1400

This same model is supplied without the detachable tonneau, "torpedo deck," to seat two passengers only, at $1300.

inches with 4-inch clincher tires, front and rear. Ignition is by high tension magneto and storage battery, there being a double system with two independent sets of plugs. The front axle is I-beam section, and the rear is of the floating type. Shaft drive is used. The springs are semi-elliptic both front and rear. The gasoline tank is under the front seat. The body is of the prevailing runabout style, but arranged, by means of two "bucket" seats at the rear, to carry four. The price of $2750 includes, a folding top which covers all four seats, or a regular chauffeur's seat at the rear and no top, are supplied. The car is finished in red, and upholstered in the best grade of hand buffed leather. The equipment consists of two headlights and generator, two side lamps, tail lamp, horn and full set of tools

The Apperson "Jackrabbit," selling at $5000, will continue to be the company's leader in the runabout class.

Model K, 50-55 H. P., four-cylinder touring car at $4200, complete, will remain the regular model in the touring car class. It is claimed by the company that this is the strongest and, for its rated horsepower, the fastest car in the world. The standard equipment included in the list price is unusually complete, and consists of folding top, robe rail, tire carrier, foot rest, trunk rack, three oil lamps, two head lights, generator and full set of tools.

The other new Apperson car is the model S, six-cylinder, 50-55 H. P., seven passenger touring car, price $5000. The cylinders are 4½-inch bore and 5-inch stroke. In general design and construction it will closely resemble the 50-55 H P., four-cylinder touring car, model K.

The company will continue to cater to those who want an unusually high powered, high speed, racing runabout by building its famous "Big Dick," price $7500

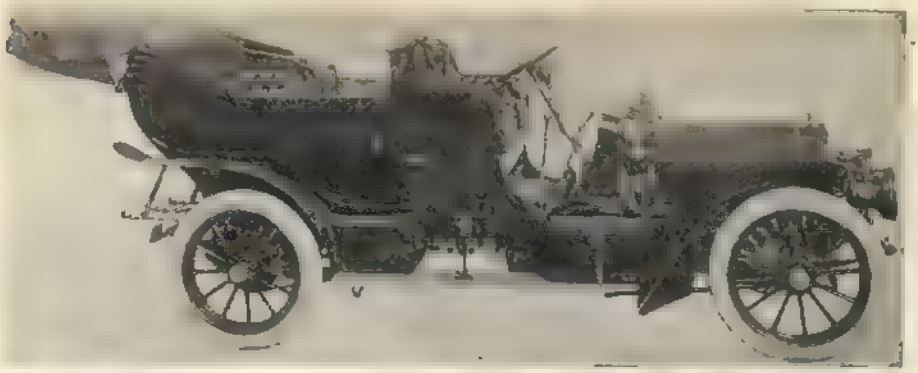


Fig 2 The Apperson Model K 50 55 H. P. Touring Car. The standard equipment includes folding top, robe rail, tire carrier, foot rest, trunk rack, three oil lamps, two headlights, generator, and full set of tools. Price $4200

Grand Central Palace Show—Exhibit of the Austin Automobile Co., Grand Rapids, Mich., and Pennsylvania Motor Car Co., Bryn Mawr, Pa.

NOTABLE FEATURES

For 1908, while retaining the two forms of motor, four-cylinder and two opposed cylinders, the Jeffery Company will make only two separate forms of chassis and will place only two styles of bodies on each chassis, making a line of only four cars as contrasted with seven different vehicles in 1907. This great reduction in the numbers of different models and the consequent lessening of the number of different pieces demanded from the factory, gives much greater factory producing capacity with much more time available for the consideration and betterment of each detail required, and cannot fail to both lessen the first cost and improve the quality of the 1908 cars.

The 4½x4½ bore and stroke is retained in the four-cylinder motor of Model 34, but the overhead valve placing and beam valve-action have been changed to both valves on one side of the cylinders, with direct valve-action from one cam-

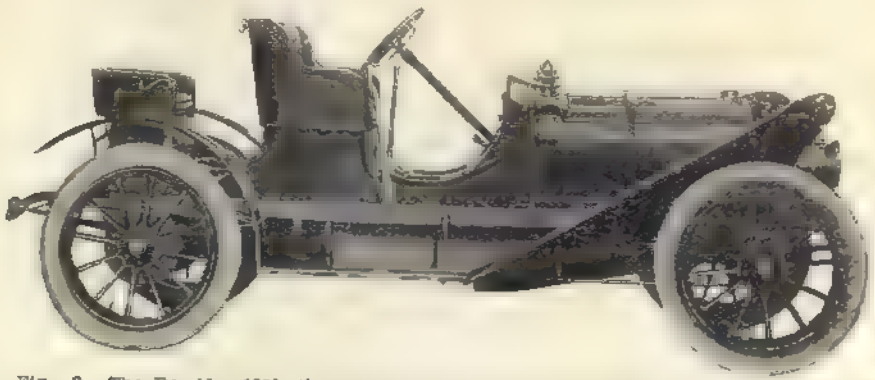


Fig. 2. The Rambler 1908, three-passenger roadster, same Model 34 chassis, to seat three passengers, weight 2350 pounds. Price $2250, including five lamps, mats, horn, tools and gas tank, ready for the road.

shaft. The crank shaft has been enlarged from 1¾ inches to 2 inches diameter, with an increase in the length of the bearings. The port diameter is carried over unchanged 1⅝ inches for both intake and exhaust.

The unit propulsion assembly first adopted by the Rambler in 1907 has been improved by making the sliding gear change selective, and the side-shaft as well as the line-shaft is placed on Timken rollers. The prest steel brake-drums have been increased from 10 to 13 inches diameter. The internal brake-shoes are of grey iron, and the external brake-band is camel's-hair-felt faced. The bevel gear and the twelve-pinion spur balance gear gave satisfaction in 1907 and are retained in 1908. The spark and throttle control, formerly had by a tilting ring placed under the steering wheel in all previous cars, is obtained by ratchet-retained levers on top of the hand-wheel in all the 1908 models.

The 1907 steering-gear, a screw on the steering shaft with trunion-nut and slotted arms for the globe-end steering bell-crank, is retained. This is one of the best forms of screw steering-gear, and with the increased bearing surface given the nut-trunion boxes in 1908 is thoroly reliable.

The aluminum crank-box and oil-pan and the grey iron crank-box and separate grey iron oil pan, both used in the 1907 Rambler motors, have been discarded in favor of a new, one-piece, grey-iron, combined motor-base and oil-pan for the single model of four-cylinder Rambler 1908 motor. This grey-iron, integral crank-box and oil-pan is made with the whole right side open and is a very great improvement. It is not out of place to note here that notwithstanding this change from aluminum to grey iron in the motor base, the Model 34 chassis is about 100 pounds less weight than the 1907 chassis, using the same bore and stroke motor.

The Rambler Models 21 and 27, 1907, showed a new opposed cylinder motor assembly, which boldly enclosed the fly-wheel, clutch and planetary change gear in a large cylindrical cast aluminum housing, fully protecting the planetary brake-bands and the clutch from dust and road drift, and giving this simple and low-cost driving assembly a durability never before attained. For 1908 this same general scheme of assembled unit, opposed-cylinders, propulsion assembly has been retained with a larger fly-wheel, giving a powerful, compact well supported and perfectly protected construction.

The ratios of the planetary change gear have been somewhat changed, the planetary brake-drum diameters have been increased, and the disc-clutch lubrication has been made certain by taking an oil lead to the inside of the annular friction disks. The planetary speed changes are all retained by a spring pawl which automatically engages a notched segment at each change, so that the driver need not hold any engagement after once made, while there is yet no unlatching required before a subsequent change can be made.

Referring first to details of the Rambler 1908 four-cylinder chassis, the following points are noted:

THE AXLES.

The front axle is a steel tube body, 2¼ inches diameter, walls ¼-inch thick, dropt 2 inches in the middle, steel drop-forged spring pads, pinned and brazed in place. The stub-axle yokes are steel drop forgings, forced on the tube and pinned and brazed. The stub-axle pin is one inch diameter, hardened and ground and is in hardened steel bushes. The load is carried on a disk ball-bearing. The front wheels are on two circles of balls having two point bearings. The rear axle is made up in a rigid assembly with the propeller shaft casing and the change gear-box, with one universal-joint only, at the front end of the integral line shaft, propeller shaft and bevel pinion shaft. This single shaft whi h takes the place of three shafts commonly placed between the crank-shaft and bevel gear, is squared thru the gear-box, is tapered for the bevel pinion seat, and is

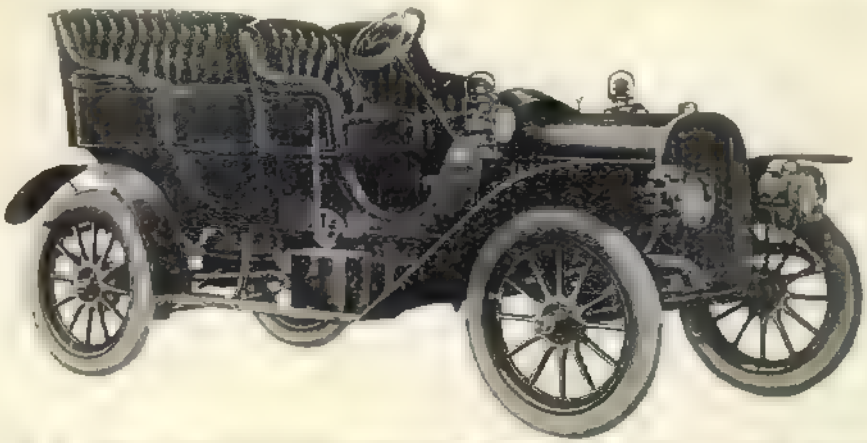


Fig 2. Rambler Model 31, wheel base, [illegible] Model 31, wheel base, [illegible] pressed steel pair of cylinders set [illegible] sliding gear transmission [illegible] gear drive [illegible] Weight 2100 pounds [illegible]

on one roller bearing at the front end of the gear-box, one Timken roller bearing at the rear end of the gear-box and one Timken bearing at the forward end of the bevel pinion with a plain babbitt bearing in the bevel gear housing at the inside end of the bevel pinion, four bearings in all for this one shaft.

The side-shaft is placed below the line-shaft, and is on Timken rollers at each end. The gear-box is an integral aluminum body and rear end, with an applied grey iron front head, the front end opening being enough to permit assembling. The gear drive from the line-shaft to the side-shaft is thru coiled spring cushions. The gearing is all special steel, hardened oil tempered and of ample dimensions

The divided rear axles are enlarged at their inner ends to form the balance gears, and are tapered at the outer ends to take the rear hubs, retained by keys and hex-nuts. The rear hubs are cupt on the insides to take large diameter caged rollers which bear on the reduced diameter ends of the rear-axle steel tube housing sleeves. The spring pads and the brake-drum-covers are in one integral malleable casting, split and pinched on the axle tube by two large screws

The brake drums, prest steel, are 13 inches diameter by 2½ inches face, 3 inches larger diameter and ½-inch more face than in 1907. The internal shoes are grey-iron castings jointed and cam-rocker expanded. The exterior brake-band is fiber lined and three-hole lever applied. Both exterior and interior brakes are applied thru eveners

THE FRAME AND SPRINGS

The frame is of prest steel. The greatest frame side depth is 4⅛ inches, width 1½ inches. It is 34 inches in the rear and 30 inches in the front. The material is high carbon steel, 5-32 inch thick

The springs are all half-elliptics, 2 inches wide in front and 2½ inches wide in the rear, ribbed and banded. The front spring is jointed to the chassis frame in front and linked at the rear. The rear spring is linked to the frame at both ends. Screw-adjusted struts are fitted. The propulsion shaft casing and gear housing resist the torsion.

THE MOTOR

The four-cylinders, 4½x4½ inches are offset 1⅛ inches, ¼ of the stroke. The integral, grey-iron crank-box has the rear end and the top seat for the middle bearing box applied. The lower haves of all three crank bearing boxes are babbitted in place; the top half of each box is rectangular outside, is tapered and has a screw-actuated adjusting wedge on top, the wedge bearing against the finished flat of the rectangular top box seating.

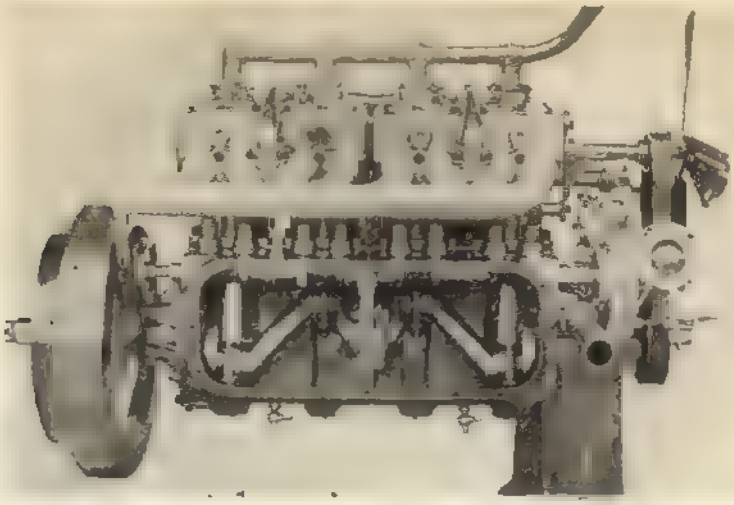


Fig. 4. Rambler Model 24 motor, right-side view, with aluminum gray-iron crank-box removed. The motor has a 3-point support, on a shaft passing thru the crank-box in front, and in the rear the crank-box is journaled in a bearing on the chassis-frame cross-girt.

THE CLUTCH

The clutch is a reversed cone, leather faced, between two coiled springs, the larger and stronger on the inside, to press the cone to the rear into engagement, and the other coiled spring is placed between the disengaging sleeve and the cone hub. The disengaging action first closes the exterior spring on itself and then pushes the cone forward against the internal stronger spring to effect the disengagement. So far the outer coiled spring has no functional effect, but when engagement begins by release of the exterior spring compression, the cone is between two coiled springs opposed to each other, and this causes a "gradual" engagement, altho the clutch-leather is fixt directly to the cone face. This gives a very flexible slipping engagement which permits starting the car on high gear when the road surface is fair This arrangement is new to the writer and seems to be a real improvement. The universal joint from the clutch hub to the line-shaft is a short, double-ended "wabbler," all hardened working surfaces. The thrust of the driving wheels is thru the struts to the chassis frame.

THE MODEL 31 CHASSIS.

The front axle is the same general

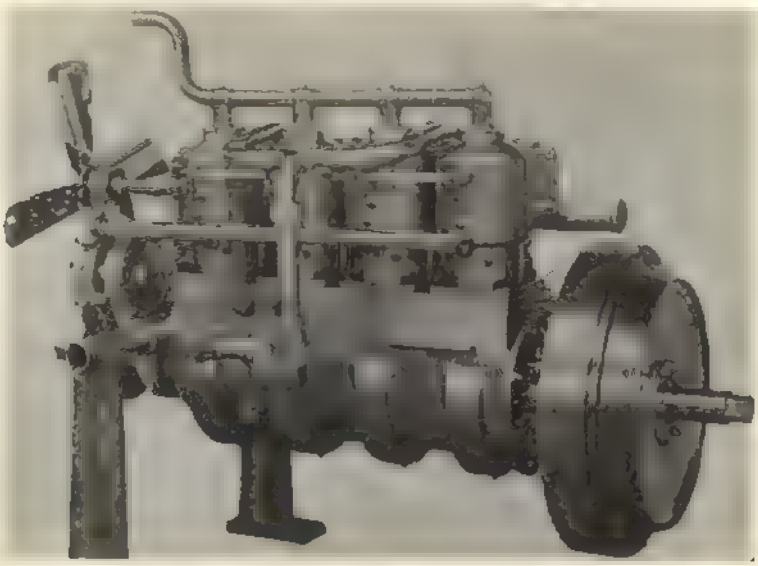


Fig. 5. Rambler 1908 Model 24, left side and rear of motor. This illustration shows the forward tubular shaft which supports the forward end of the motor, and the exterior of the fly-wheel and reversed cone clutch.

construction as that of Model 34; the dimensions are reduced in some instances to give a somewhat lighter weight. The front wheels are on the same ball bearings as in Model 34.

The large, cast-aluminum, cylindrical casing at the left, Figure 7, is capt to give access to the brake-bands and has hubs to take the brake band applying rods and one bracket for the change rocker, the

Fig. 8. Rambler 1908 Model 34, gear-box, propeller-shaft sleeve and rear axle, all in one integral assembly. A general description of this very interesting construction is given in the text of this story.

THE AXLES, SPRINGS AND FRAME.

Save for the chain driving the construction is the same as that of Model 34. Some of the dimensions are reduced for Model 31, while others are the same for both axles. The springs are half-elliptics in front, 35 inches long by 1¾ inches wide, jointed in front and linked in the rear. The rear springs are full-elliptics, scroll heads, 36 inches long, 1¾ inches wide. The struts are screw-adjusted for length, tubular steel bodies, flat, vertical joints in the rear and globe-joints to chassis frame brackets in front. The chassis frame is prest steel,

other end of which is journaled in a bracket on the chassis-frame right-side.

The mechanical oiler, four leads, driven with a coiled-wire belt, sits on top of the crank-box; one oil-lead goes to each cylinder, one to the middle crank-shaft bearing and the fourth lead is carried to the disk clutch, next to the fly-wheel. The roller chain is one-inch pitch, and the small sprocket is hardened. The valves for one cylinder are worked directly from the cam-shaft. Those for the right cylinder, are worked thru rock-shafts and links, as

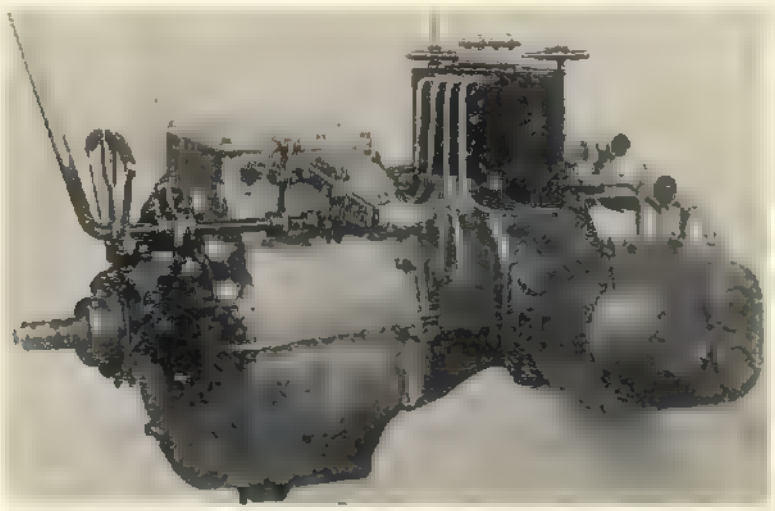


Fig. 7. Rambler Model 31, exterior of motor and speed-change assembly. General description in the text of this story.

greatest depth 4 inches, width 1¼ inches, frame sides tapered at the front ends only. This chassis frame is one width only, 34 inches, frame sides parallel.

For Model 34 the rectangular, brass fuel-tank, 16 gallons, is placed under the driver's seat. In Model 31 the brass fuel tank is cylindrical, 13 gallons capacity and is carried under the hood. No air pressure is used on either tank.

shown in the plan view of the motor. The cam-shaft, spiral gear driven, is vertical.

MODEL 31 BRAKES

These are rear hub drums 10 inches diameter with jointed internal shoes, cam rocker expanded. The transmission drum, 13½ inches diameter has a brake band fitted, which is effective under very light pressure

Fig. 8. Rambler Model 31, left side of motor cam-shaft and valve-action cover removed showing the [illegible] cam shaft sprocket [illegible] from the crank shaft the direct valve action for the left cylinder and the indirect valve-action thru sliders connecting rods and rock shafts for the valves of the right hand cylinders

CONTROL.

The control is substantially the same for Models 34 and 31. The spark and throttle are regulated by levers, ratchet retained, on top of the hand-wheel. The steering is by a screw, trunion-nut and slotted-arms of the globe-ended steering bell-crank. Model 34 has two outside levers, two large pedals and a horizontal accelerator pedal. The outside latched hand-lever when pushed forward first disengages the clutch and then applies the external rear hub drum brakes. The inside lever is rocked sidewise to select the desired gear-shift rod engagement. The left pedal is pushed forward to disengage the clutch only. The right pedal is pushed forward to apply the internal, ordinary brakes only.

Model 31 has one outside lever and three large pedals, no accelerator pedal. The outside latched hand-lever has three positions, high-speed forward; low-speed in rear, and neutral in the middle. The left pedal is pushed forward to disengage the multiple-disk clutch. The middle pedal is pushed forward to obtain the reverse. The right pedal is pushed forward to apply the internal emergency brakes. The transmission brake is applied by pulling the hand-lever to the extreme rear, thru and past the low-speed engagement. Ignition is by single jump-spark plugs and storage batteries in both Models 34 and 31

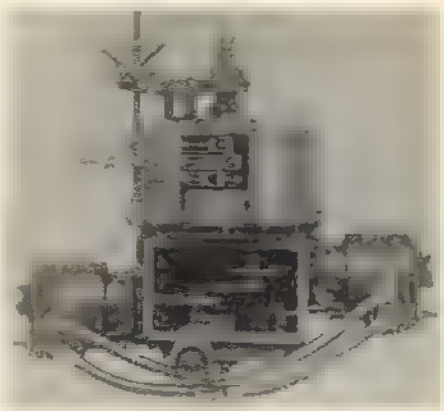


Fig. 9. Rambler Model 31, part of motor and fly-wheel and gear-box casing with the crank box cover and the planetary speed-change casing top-cover removed exposing the cranks and the [illegible] and the planetary brake bands. The [illegible] are protected by a large cast aluminum casing, entirely covering and protecting the fly-wheel and planetary speed-change

Colonial Vanadium Steel

The Colonial Steel Co., Keystone Building, 324 Fourth avenue, Pittsburg Pa., manufactures a line of vanadium steels for automobile constructions in different grades of strength, etc., each grade to suit its specific purpose. Grade A is suitable for piston rods, crank shafts, pins, bolts, nuts, connecting rods, gears, etc. This grade has an elastic limit of 80,000 pounds per square inch; tensile strength 110,000 pounds per square inch; and an elongation of 22 per cent. Grade D is suitable for springs, crank pins, ball and roller bearings, etc. The elastic limit of this grade is 90,000 pounds per square inch; tensile strength 150,000 pounds per square inch, and elongation 13 per cent. This grade can be annealed readily, and will harden in oil or water. Altho specially designed for the purposes mentioned, Grade D will be found extremely valuable for many articles where great hardness combined with unusual strength is required. This concern also makes a Grade E, which is a low carbon steel suitable for any case hardened parts.

The Cadillac 1907 Model G. Touring Car

HUGH DOLNAR

Much interest attaches to the Cadillac 1907 four-cylinder practice because of the very satisfactory service given by the Cadillac single cylinder, which has been built in large numbers and as yet shows no sign of declining sales. The automobile shows many contradictions of the present time which are difficult to comprehend on account of their seeming separateness, perhaps because in the default of just what to think about the differing merits of 4-cycle cylinders, from one to eight, employed to drive cars having very close specifications of chassis, and very close prices to purchasers as to carry designation of favorites. It would seem that a builder of cars who succeeded in establishing a popular model would be most likely to continue the distinctive features of that car in all of his offerings so long as purchasers would take the product, and that the motor-car builder making a pronounced success with a single cylinder car would continue with single cylinders, rather than to make so wide a divergence from previous successes as is involved in changing from a single cylinder to a four-cylinder motor.

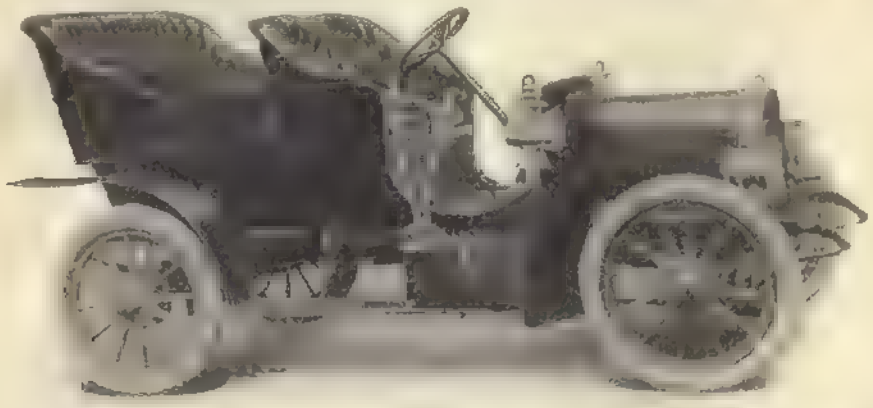
Again, taking the situation the other way about, it would seem that if the 4-cylinder is correct practice, and the 6-cylinder is even better than the 4-cylinder, then the single cylinder should be a hopeless aspirant for public favor.

But the Cadillac approximate sales-totals do not support either of these conclusions. In its first year, 1903, the Cadillac sold 2500 cars driven by a 5x5, single, 4-cycle, water-cooled cylinder, and it is to be noted that this same motor has been continued ever since, and is to be continued at least thru 1907. In 1904 over 2500 of these Cadillac single cylinder cars were sold, over 3600 in 1905 and over 3700 in 1906.

In 1905 the Cadillac Company sold about 150 "Model D" 30-H. P. 4-cylinder cars, and in 1906 about 150 Model H cars, also 4-cylinder, 30-H. P. motors.

During 1907 the Cadillac Company expects to build about 4000 single cylinder cars, same 5x5-inch motor, 350 of Model H, nominal 30-H. P., 4-cylinders 4⅜x5-inch, and 1000 of the Cadillac 1907 new Model G, 4-cylinder cars, nominal 20-H. P., 4-cylinders 4x4½ inches.

The Cadillac single cylinder cars have had either runabout bodies, 2-seats only, or detachable, folding or "built-in" seats for 4-passengers, tonneau or modified tonneau body. For 1907 the Cadillac single cylinder chassis will be fitted with three styles of bodies, a runabout with 2-seats,



Cadillac Model G, wheel base 100 inches, tires all [illegible] and full elliptic rear, motor 4 vertical, 4-cycle, water cooled, [illegible] H. P. Tonneau body side doors, swinging to rear seats for 4 passengers. Weight [illegible] Price $2000 including bath and tools. Horn and [illegible] Type Of $120 extra.

a four-seat body for 4 passengers and a four-seating tonneau, also 4-seated.

It has been confidently asserted by sales agents ever since 1904 that the day of the single-cylinder had passed, that nothing with less than two cylinders could find buyers, and that 4-cylinders must soon be the fewest recognized number for a respectable motor car.

The foregoing Cadillac sales totals show conclusively that the day of the single cylinder driven car has not yet passed, and that whatever the near future may show, a very great number of single cylinder cars will be sold in 1907.

The Cadillac models D and H had similar 4-cylinder motors, and both had planetary gears, but there were marked chassis differences otherwise. Model H, 30-H. P., continued in 1907, will have the same planetary speed change.

The Cadillac 1907 Model G is an all-new car, 3 forward speeds and a reverse selective sliding gear, no gears in mesh on high speed, cone-clutch, female cone cut and

bent to obtain a gradual engagement, and many other features differing from any previous Cadillac model.

Its specifications are. Wheel base, 100 inches Tires all 32x3½ inches. Springs, half-elliptic front and full-elliptic rear. Motor, 4 vertical, 4-cycle, water-cooled, 4x4½ inch cylinders, nominal 20-H. P. Tonneau body, side doors swinging to rear, seats for 4-passengers, weight 2200 pounds

ed sections of the female member, to give a gradual engagement. No gears are engaged on high speed. The ignition is jump spark four coils and storage battery.

THE AXLES

The front axles are steel tubes, yokes and spring-pads fixt by brazing The front wheels are on two circles of balls ¾ and ½-inch diameter 2-point American ball-bearings. The load is carried on circles of ⅜

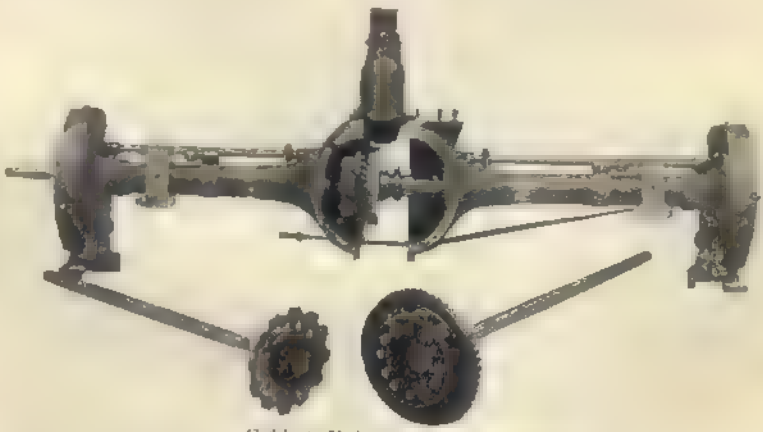
Cadillac Model G Chassis plan view

Price $2000, including mats and tools. Horn and lamps extra. Cape top, $120 extra.

The cylinders have applied copper water-jackets and applied cylinder heads. The valves are all on one side. The water-circulation is by a screw pump. The cylinders are offset ⅛ of an inch

The front wheels are on adjustable 2-point American ball-bearings. The rear axles, propeller shaft and gear box shafts are on Hyatt rollers

balls The stub-axle is journaled in the yoke-eye bushes, top journal 1¼ diameter, bottom journal 1⅜ diameter. The steering arms are applied to the tapered square ends of the axle journals, castelated hex nut and split-pin retention. The stub-axle journal bushes are bronze, top one forced in the yoke, bottom one threaded in the yoke, and flanged, flange notched, adjustment retained by a spring-plunger which enters the bush-flange notches.



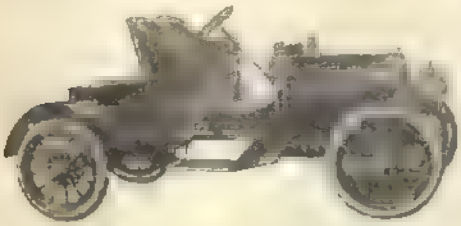
Cadillac Model G rear axle

The torsion arm is not used, and the fixed length struts have globed connections at both ends. The motor base is hinged forward to tip side-wise, and is fixt to its rear supporting chassis frame cross-girt

The clutch is a reverse cone, with distort-

The 2-point wheel bearing adjustment is retained by a castelated hex nut The front hubs have threaded dust caps outside and dust washers in their inside ends. The load ball-bearing bush is threaded into the top yoke-eye, and screw grease-cup, adjust-

The rear axles are tapered at both ends, key and castellated nut and split pin wheel retention outside, and key and large hex-nut with pointed screw retention inside, fo the spur balance gears. The rear axles and bevel pinion shaft are on Hyatt rollers with ball thrust-bearings. The propeller shaft has one universal joint, to the rear end of the line shaft only



Cadillac Model G Runabout. Price, $2,000

The gear housing is capped, cap and housing both of malleable cast iron. The strut collars are malleable cast iron, as are the spring perches and brake-drum covers, which have integral brake-rocker sleeves Everything is fixt to the steel tube rear-axle sleeves by hot riveting. The prest-steel brake drums are 13 inches out diameter. The internal shoes are toggle expanded, and the brake bands are 3-hole rocker constricted. Both brake-bands and shoes are faced with camel's hair felt

Globe-end strut wrists are forced in the strut collars and pinned. The struts have no length adjustment, and have capped globe-boxes at each end. There is no brazing on the rear-axle

THE SPRINGS

The front springs are 40x1¾ inches, six leaves, lipped and banded, perched 18 inches from the forward end to the front axle center

Cadillac, Model G, double acting internal and external hub brakes and rear spring suspension.

The rear springs are scroll-head full elliptics, 36 inches long x 1¾ inches wide, lipped and banded, 6 leaves. The rear springs are fixt to the non-revoluble axle perches below, and are journaled to bracket trunnions on top

THE CHASSIS FRAME

This is of prest steel, 32 inches wide, parallel sides, greatest depth 3¼ inches, by A. O. Smith The two forward cross-girts are dropt, the front one 8½ inches and the rear one 7½ inches. The motor base is narrow and is fixt to the rear girt by two screws, one on each side. The front girt has an upstanding lug which is straddled by two lugs on the bottom of the aluminum oil-basin, which forms the lower crank-box member, and a ⅝ steel pin, hardened and ground, is driven, from front to rear, in steel bushes in the underneath aluminum basin-lugs, and passes free thru the front

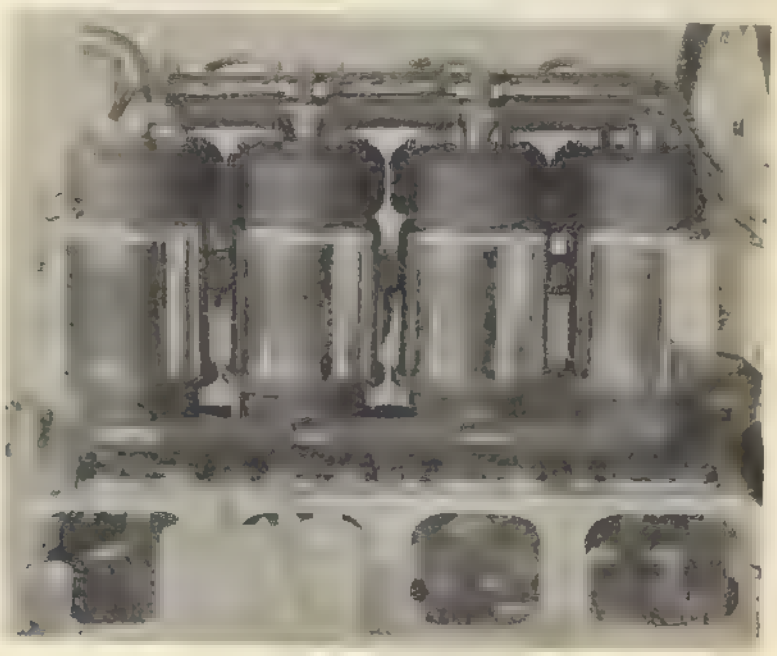
Cadillac Model G, Engine—Right Side.

cross-girt up-standing lug, so as to permit the motor to rock side-wise on the front cross-girt at its front end, while the rear-end of the motor base is fixt to the cross-girt by two screws, thus giving the motor a 3-point support which prevents chassis frame distortion stresses from reaching the motor base. No sub-frame is used. The gear box lugs are long, and are seated on prest-steel brackets fixed inside the chassis frame by riveting.

The fan is on ball-bearings and is driven by a "V" belt, same as the screw pump which circulates the cooling water, the two shives for these belts being fixed to the front end of the crank-shaft. The water pump is one turn of a true screw, 13-16 pitch, driven about 2 turns to 1 turn of the crank-shaft.

The cam is pinned for grinding, is rocked to stops, and the cam flanks are tangents at fixt angles, so that the cams can be duplicated without the use of the former and "Blanchard" fixture action. Pratt & Whitney pins, taper ⅛ on a side in 12 inches, are used to fix the cams to the cam-shaft, and of the many thousand cams pinned to the cam-shaft which have been sold by the Cadillac Company, only two have ever loosened in work.

The cylinder heads and water-jackets are applied. The heads are grey iron, and are tapt in the middle with 2¾ inches diameter 12 p. i. left-hand thread. The cylinders are tapped to match with a right-hand 2¾-inch 12 p. i. thread. A steel nipple, having a hex wrench hole in the middle, is threaded left at top end and right-hand at the



Cadillac, Model G Engine—Left Side

The commutator is a hardened and ground steel ring fixed to the inside of a fiber ring which insulates the four contacts, and is carried in a casing sleeve and driven by the top end of an inclined shaft, miter gear driven from a cam shaft. All the valves are on one side of the cylinders. The ports are all 1¾ inches diameter and the valves are 2 of grey iron driven to shoulders on the steel stems, and fixt by riveting the stem-ends with a hammer. The cams are applied to the cam-shaft, are fixt with one taper-pin in each, pins not riveted. The cams are first milled to shape, then the pin-holes are drilled and reamed, then the cams are hardened, and then are ground by pinning them to the grinding machine fixture spindle. The cam-flanks are tangents to the base circle. The cam-arbor to which

bottom end. To assemble the head and cylinder this threaded nipple is placed on top of the cylinder thread and the head, in turn, is set on top of the nipple. The nipple is turned to enter both head and cylinder by a long shank solid hex-end wrench that fits the inside hex socket of the nipple.

The water jackets are drawn copper shells, open at the lower end and flanged at the top end to lie on the cylinder end and be pinched between the head and the cylinder when the right and left thread nipple is turned hard, as before described. The open end of the copper jacket fits a finished flange edge on the lower surface of the cylinder, and a finished steel ring is driven hard over the water-jacket to bind the jacket lower end to the cylinder flange. The lifters are forked and carry hardened and

ground cam-rollers, are in cylindrical guides and have concentric holes in the top ends to guide the bottom extensions of the valve stems. The valve stems are enlarged above the lower top-ends, the enlarged part is threaded and takes a split and pinched nut which is adjusted to vary the valve-stem length, the under side of the pinched nut being impinged by the lifted top as it rises by cam action. The valve seats

Cadillac Model G, Engine—Front End

are 45 degrees, and are integral with the applied cylinder-heads.

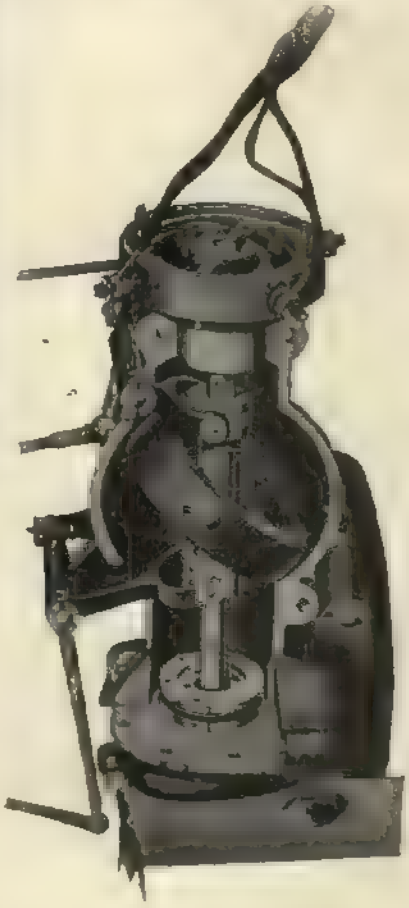
The compression space is partly in the cylinder, partly in the hexagon inside of the right and left nipple and partly in the applied cylinder head, making a combustion space as widely divergent from globular form as can easily be imagined. The valves are both on one side and the spark plugs are directly over the intake valve. All Cadillac cylinders have this double head mushroom shape, yet all Cadillac motors start promptly and are regarded as economical in fuel burned.

The screw circulating pump takes little power and gives wholly satisfactory service. It has been in use about 6 months, and so far shows no detrimental wear. The water screw shaft is packed on both sides of the screw-case, as it is carried thru to drive the lubricator.

The piston pin is 11-16 out diameter, has a 11-16 hole thru it, is hardened and ground, and is fixt in the piston. The top end of the rod has a bronze bush forced in it. The rod caps are hinged, and are fitted with split shell boxes, lined with babbitt. These rod wrist-boxes are cylindrical, split and doweled, not flanged. The lubrication is a single plunger pump with a single sight feed to the rear one of the four oil-basin crank-pits, which do not communicate. All four pits are supplied with oil to splash at first start; afterward the supply is to the rear oil pit only. The crank-pits have no overflow stand-pipes and no oil returns to the pump.

The current for admission is from a storage battery, with case room for dry cells. The ignition is by jump spark, one plug to each cylinder.

The crank-shaft bearings are bronze, cylindrical, split and babbitt lined. The crank-shaft endwise piston is fixt by the middle bearing, the other four bearings having ample end-chase.



Cadillac Model G Governor

The clutch is a leather-faced cone, reversed, female member applied to the fly-wheel, and having eight sections of the integral applied cone freed by cutting at one end and one side, so that the free end can be forced inward to take a permanent set, these free-end cone sections forming stiff springs and giving a gradual engagement of the leather-faced male clutch member. The clutch is spring-engaged normally, and

is interlinked with the gear shift and with the emergency brake.

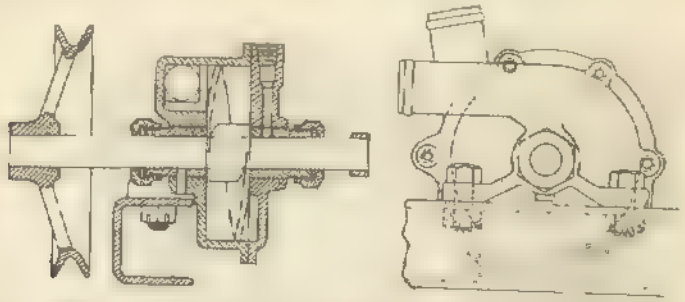
A hexagon female "wabbler" member is applied to the rear clutch hub end, and a "wabbler" male hexagon front end engaging the clutch female wabbler, and female rear end of the wabbler engaging the hardened male wabbler member fixed to the forward end of the change gear line-shaft. The change gear is selective, 3 forward speeds and a reverse, and no gears are engaged on high-speed. The change gears are all 6 d. p. and are all Carpenter special steel, hardened. The side shaft is at the left of the line-shaft and both the side and line shaft are on Hyatt rollers. The shifts are by a central rod and a concentric sleeve, with bronze forks

A single "Cadillac" universal joint, all bearings oiled by one grease cup, is placed between the rear end of the line shaft and the propeller shaft front end. The propeller-shaft sleeve is not yoked to the chassis frame, and the driving wheel impulse in either direction is applied to the chassis frame wholly thru the globe-connected struts, and rear axle torsion is resisted mainly if not wholly by the propeller and line shaft universal joint.

The brakes are external and internal coacting with the 13 inch diameter rear-hub prest steel brake drums, all camel's hair felt faced.

GOVERNOR.

The governor is a ring, with a diametric pin thru the commutator-shaft. At rest, the ring is inclined, and motion makes the ring tend to stand at right angles across the shaft, and the angular movement of the governor-ring is transferred to the throttle The angular movement of the governor-ring due to motion is resisted by a coiled-spring, and the tension on this spring is varied by a hand-lever, notched segment retained, on top of the steering-wheel. The less the spring tension the less the throttle opening is, and the greater the spring tension the more the throttle is opened, at a given motor speed. The hand-wheel, throttle-lever, thus works on the governor spring only, and is not connected directly to the throttle. A foot board accelerating-pedal is linked by a rigid linkage to one throttle rocker arm, and a second throttle rocker-arm has a revoluble wrist pierced to slide on a long rod from the governor-actuated rocker; the governor throttle-rod carries two long coiled springs, between which the throttle rocker wrist is located, ordinary arrangement, so that depressing the accelerator pedal increases the throttle opening without reference to governor control of the throttle, and so that when the spring-lifted accelerator-pedal is released, the long-coiled-springs on the governor rod return the throttle arm to governor control. The throttle opening for a given governor-position depends on the position of adjustable spring abutments on the governor rod, so that the positions of the spring abutments govern the motor speed for a given governor-position, subject to interference by the accelerator pedal.



Cadillac. Model G, screw water circulating pump; end and section The screw is one turn of a true screw, 13-16 ins. pitch, 3½ ins out diameter, thread, 1 13-16 deep on a side, and about ⅛ thick.

Cadillac Model G, clutch and wabbler connection

CONTROL

The outside hand lever is latched, is interlinked with the clutch, and stands idle forward; when pulled backward this outside lever first disengages the clutch and then applies the exterior brakes to the rear-hub drums.

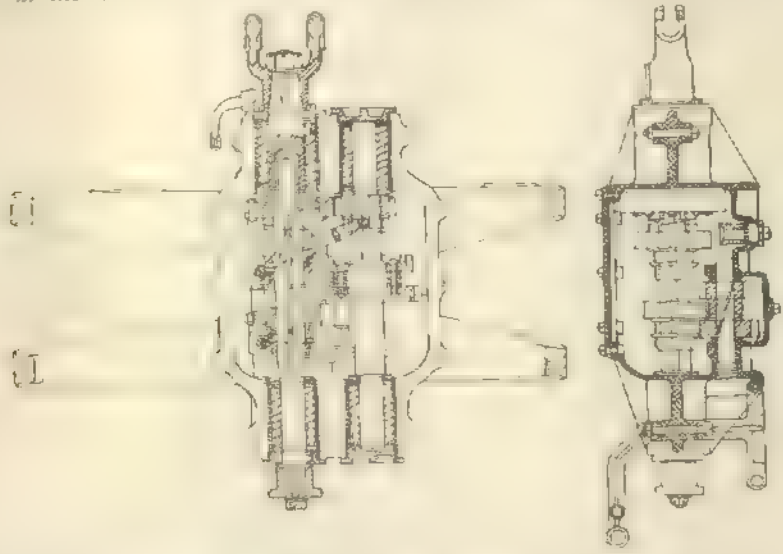
The inside hand lever is in an H-slot, is locked when the clutch is engaged, and the

clutch must be disengaged by the pedal before any gear-shift can be attempted.

The left-hand pedal disengages the clutch only. The right-hand pedal applies the internal rear hub brakes only. The internal, ordinary, brake-shoes are toggle expanded through an evener. The exterior brake action does not include an evener

The accelerator is worker by a small horizontal pedal, and the muffler is opened by a plunger pedal. The spark and throttle levers are on top of the steering wheel, and are stationary notched segment retained.

The steering action is a worm and a distorted worm-gear sector. The worm-gear teeth are turned and cut on centers about 7-1000ths in the mid-radius towards the foot of the grade, followed by a prompt acceleration as the governor gave more fuel, and then a nearly constant pace up the remainder of the grade, over the bridge and down the grade at the leaving end. The 7 per cent grade gave a coast down hill, of course, but the car did not accelerate on the down grade, and did not suffer retardation on striking the level at the foot of the grade. Some bridge crossings were made without changing the spark-time lever position, and in these crossings the governor held the car at about the same rate up hill, down hill and on the level, tho this was done at some slight waste of fuel, in Mr Sweet's opinion. Altogether, the governor control was most satisfactory, and clearly showed the great advantage of



Cadillac 1907, Model G, change gear and box.

"straight ahead" position, making the worm-gear sector teeth drop below the pitch circle on each side of the middle when new. The worm-gear sector is journaled in eccentric bushes, and as the sector wears fastest at the middle there is a gain of life by having the sector teeth close in the middle when new.

ON THE ROAD.

January 30, 1907, a Cadillac 1907 Model G, Ernest E. Sweet, driver, Hugh Dolnar front seat passenger, was driven from the Cadillac shops to the Boulevard Bridge over the D. G. H & M. Railway, Detroit, which has a 7 per cent. grade on each side, and a number of crossings were made, up the grade, across the bridge and down the grade, to show the action of the governor on the throttle without accelerator-pedal interference. The day was cold with a thin covering of snow on the road surface, which did not, however, cause much driving-wheel slip, so that the governor control was fairly exhibited The action of the governor is very prompt and very satisfactory, at all speeds, fast or slow, both on the high speed and with gear reductions. A very slight reduction of pace was shown at the governor control with the ordinary driver's skill. The runs with the unchanged spark-time appeared, to the writer, to show that both spark-time and throttle might be governor-controlled, as the governor held the car to a satisfactory pace regulation in the trials made with no change of the spark-lever position.

The motor was prompt in starting, the car rides easily, and the power is ample to give a 50-mile pace when desired on ordinary roads

The gear shift handles extremely well, as the gear teeth are beveled most on the side to give the most entrance s[illegible]ce when driving forward, which is corre[illegible] since no gear shifts are required when coasting or backing.

The brakes are very powerful, as might be expected with 13-inch brake-drums and toggle expanded shoes.

The Cadillac workmanship is excellent, the entire control of the car was all that could be desired, and the bridge trials showed the governor control to be of real value where the governor action is carefully worked out and well built.

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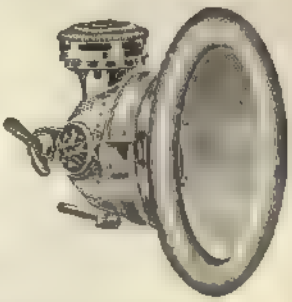

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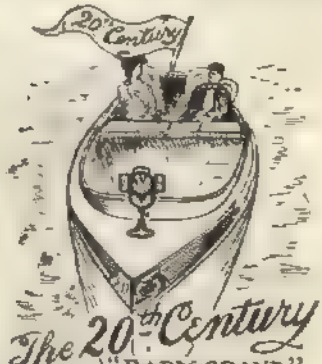

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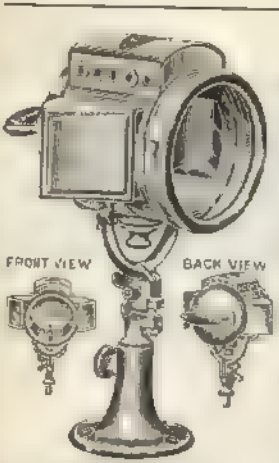

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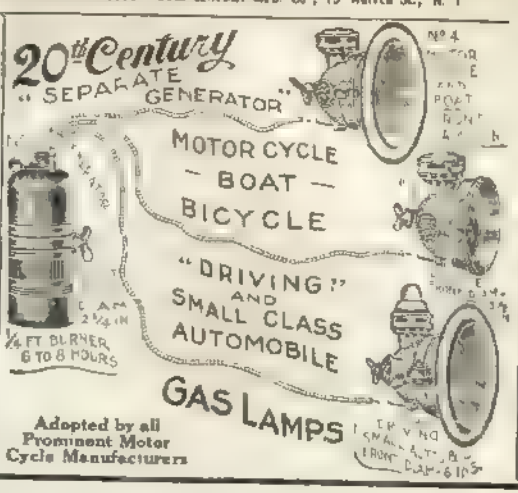

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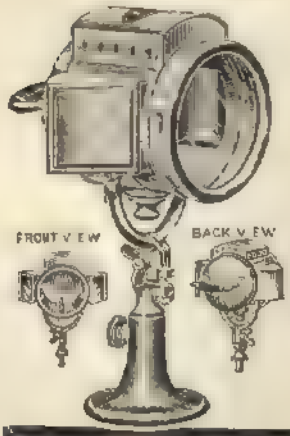
Beyond all comparison the cheapest way to finish motor crank shafts in quantity from the rough forgings is by the use of the Tindel-Albrecht Lathe for rapidly cutting down the rough forgings to grinding size and finishing on the Tindel-Albrecht Special Crank Shaft Grinding Machine

Cost of installation is less than any other.
The output is much the largest.
No accessory fixtures are required.
The wear of grinding wheels is trifling.
The accuracy of the work is unequalled.

Write us for particulars

THE TINDEL-MORRIS COMPANY, EDDYSTONE, PA., U.S.A.



20th Century "BABY GRANDS"

combination

Head, Port and Starboard Lights

Authorized by marine laws on

BOATS up to 40 feet. 2 Sizes 4 & 6 inch.

Finest ground Mangin Parabolic Reflectors

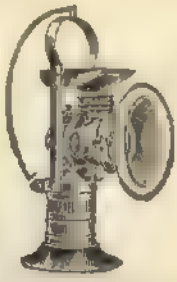
The small size 4 inch without side lights, becoming very popular as

Motor Cycle Searchlight

Send for special literature.

Complete line in Century Catalogue

20th Century Mfg Co., 19 Warren St., N.Y.



20th C. No. 12 Acetylene Hand Lantern

HEADLIGHT

with red and green side Jewels for small Boats as

CANOES, Barges, &c.

Removed makes Camp Light

DEALERS AND GARAGES

Our large stock enables us to make prompt shipments. This is very essential to your business at this time of the year—and our prices are unusually interesting. Better get *our* catalogue and price list.

THE AUTOLIGHT AND MOTOR SUPPLY CO.

INCORPORATED

506 8 North Broad Street — Philadelphia

AMERICAN

1907 COILS, PLUGS, TIMERS, ETC.

will remedy your ignition troubles

American Indestructible Mica Cadillac Cores, $1.00 per pair.

1907 American Indestructible Spark Plug

Recognized the world over for its superior qualities. It is practically Soot Proof and lasts indefinitely. For Efficiency and Durability our 1907 line of Coils has no equal. They are fitted with an extremely fast vibrator and embody a special form of insulation, which cannot be punctured under any conditions. We make all styles including the **UNIT DASH TYPE.** You should also investigate our new 1907 Timer and other ignition specialties. Write for catalog.

American Coil Co., Foxboro, Mass.

Try this Spark Plug—thirty days—

at our risk—two plugs for the price of one

Let it prove itself on your own car. If you want a plug that is positively Interchangeable gasketless packing, every wire readily adjustable position without detachment one that operates every time needs no wrench but a rubber

CHARTER PLUG "No tools but your fingers"

The core is of [illegible] The Joints are BEVELED, GROUND and VALVE SEATED and the base FIRMLY HELD. No matter how often you remove your core the gasket will always be present. Core can be removed, to examine or replace by simply loosening the [illegible] WITHOUT FINGERS. Charter Plugs are made in standard metric and all sizes. Every Plug is guaranteed. Price $1.00 each. Try one 3 days if it does not do as we say send it back and your money will be refunded at once.

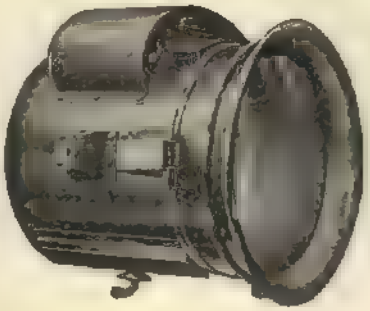
Special Free Offer—To demonstrate the ease and economy of Charter Plugs we will give you free a [illegible] set of ours over and above what you ordered. That is you will receive four Plugs. Send your order Now to get the extra ones free.

CHARTER & CO., 313 Dearborn St., Chicago, Ill.

Peter Gray & Sons

MANUFACTURERS
HIGHEST QUALITY

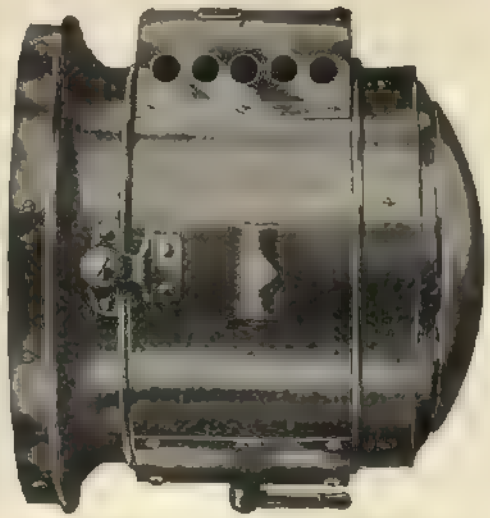
Gas Headlights and Searchlights



Send for Catalogue

90 UNION STREET
BOSTON

"E & J" LAMPS



Seldom Equalled, Never Excelled
WHY? Because we produce more light, use better quality material, constructed by mechanics of many years' experience
Pay you to investigate.
Catalog on Request

EDMUNDS & JONES MFG. CO.
DETROIT, MICH.
BOSTON BRANCH, 38 Columbus Ave., Boston.

The NEW "ROCHE" SPARK PLUG

For Motorcycles and Automobiles. *The Best Yet*

Guaranteed for one year. A new plug furnisht free for everyone that fails to stand the racket.

PRICE, $1.50

The PERFECTED STORAGE BATTERY

For Automobile Use. *A "Trouble-Proof" Battery*

Easily charged. Will last for years. Supplied in highly polished oak boxes, tightly sealed, with rubber carrying straps. *Write for prices and particulars.*

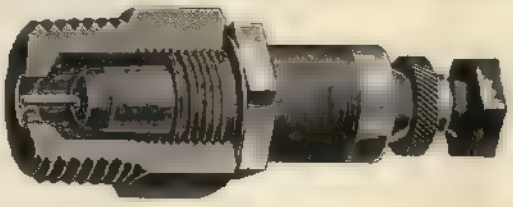
WM. ROCHE DRY BATTERY CO.
N. W. Cor. Park Place and W. Broadway, NEW YORK CITY

COMET

Is an indestructible Mica Spark Plug. The strongest made The Manufacturers Plug. Best Insulation of any Spark Plug. Nothing to break. Closed End and Open End. Price regular sizes, $1.50

SOOTLESS

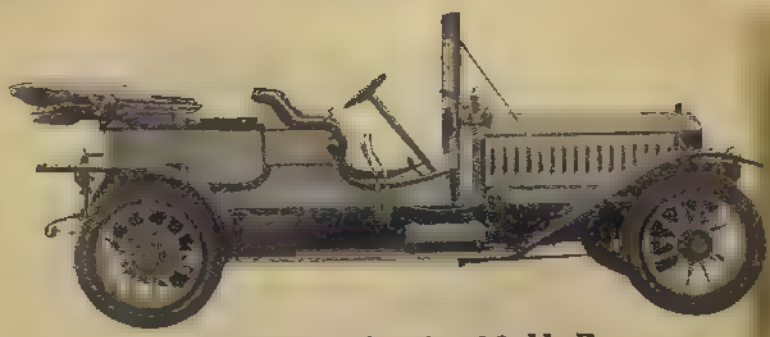
The Only Sootless Mica Spark Plug. New Invention. Only Sootless Plug that will not break in air cooled engines. Guaranteed six months Sootless. Regular sizes, $1.75 each.



Manufactured by

THE OAKES & DOW CO.
15 CHARDON ST., BOSTON, MASS.

1908 Austin Models



6 Cylinder Austin, 90 H. P.

6 Cylinder Austin, 90 H. P..

The 1908 Austin Models are designed to exactly meet my own pe sonal requirements after 6 years of building high grade cars, and to fulfill the ideas of that class of owners who want the "sportiest" kind of a car it is possible to get with *all* the power and speed they can possibly use—a car that is either a touring car or a runabout capable of making a 1000 mile trip any time, and will beat anything on the road.

Our 6 cylinder 90 h. p. model is my idea of such a car—and I believe it stands today without an equal in the Automobile world at any price.

Our new combination body as a touring car has an extra folding footboard chauffeur's seat. The tonneau seat can be replaced in 3 minutes by a rumble seat, thus converting the car into a runabout of the very latest design.

The equipment is complete in every respect, and includes both seats, and extension surrey top for the touring car, and single top for the runabout. We also furnish this new combination body on our regular 60 h. p. model in place of 7 passenger touring body. This regular standard body, either with or without detachable limousine top, will be furnished on both 60 and 90 h. p. models.

All Austin cars have the celebrated Austin Motor and are built in our own shops under my personal supervision.

Send for Catalogue and detailed information about our new models.

WALTER S. AUSTIN, Austin Automobile Co.

GRAND RAPIDS, MICH.

Mr. Dealer:

Are you "IN RIGHT" for

1908?

Are you handling the right line of cars?

Are you handling a line that worries you half to death to keep the cars going and to keep the owner satisfied?

Do you feel like you wanted to find a hiding place every time you see a user of one of your cars coming?

Are you handling a line that makes every buyer a "booster" for you, or are you handling a line that makes every buyer a "knocker"?

Does every car you sell help sell another, or does every car you sell prove a boomerang?

Do you have to cut prices because your cars wont sell at list?

Are you handling a line that people want, or do you have to work to sell them something they don't want?

Does the manufacturer properly protect you in your territory?

In other words, are you entirely satisfied?

If you're not, now is the time to commence figuring on what you are going to do for 1908.

The

line is the strongest proposition in the automobile business to-day, and next year it will be stronger than ever.

We are stocking up on material and preparing for 1908 now, so that deliveries will be made promptly throughout the season. That's an important item.

We will be prepared to handle some new territory that we haven't been able to touch before because of lack of cars.

A few "dead ones" among our dealers may be weeded out, because our output next year will be greater than ever, and we want only "live ones."

If you are open to consider the line that almost sells itself write us. Tell us who you are, what you are now handling, how much business you have done, and what you think you can do with the Cadillac.

CADILLAC MOTOR CAR COMPANY

DETROIT, MICH.

Members of Ass'n Licensed Auto. Mfrs.

¶ We make certain claims regarding the superiority of **"THE SCIENTIFIC CARBURETOR."**

¶ But:

¶ Claims are one thing; Proof is another.

¶ Now:

¶ 12 of the first 15 carburetors made by us were sent to prominent persons who were simply owners of cars.

¶ Those persons, as almost every body else does, stabled their cars at some prominent garage.

¶ We have just finished delivering 100 of the 108 carburetors for which orders were received within two weeks after sending out the first 12.

¶ Remember: these sales were not made thru an inclination on the part of car owners to satisfy their curiosity raised by the reading of some advertisement.

¶ But:

¶ These sales were made because **"THE SCIENTIFIC CARBURETOR"** showed its own superiority when placed in actual operation.

¶ We think this is proof.

¶ The E. W. Stevens Co., East New Market, Md.

GET READY FOR

1908

The sale for Cadillac cars has always been so great that our factory has never been able to fully meet the demand and we have, therefore, not been in a position to take on many new dealers.

We have, however, recently enlarged our manufacturing facilities and shall be in a position to make arrangements with a limited number of new dealers in unoccupied territory.

It is not necessary here to go into details about Cadillac cars. They are the most popular and easiest cars in the world to sell. Their unequaled dependability and economy of operation and maintenance is so universally known that the Cadillac usually receives the first consideration of a prospective purchaser, the question being whether he could get one.

If you are an automobile dealer or expect to take up the business, your success depends upon handling cars that give satisfaction and that you can sell in increased quantities year after year.

Cadillac dealers, as a rule, are the most successful dealers because they can sell more of them than any other and because it takes less effort and less expense to sell a Cadillac.

The line is as follows:

10 H. P. Runabout	**$ 800.00**
10 H. P. Four Passenger Car	**$ 950 00**
10 H. P. Enclosed Coupe	**$1350.00**
20 H. P. Four Cylinder Runabout or Touring Car	**$2000.00**
30 H. P. Four Cylinder Touring Car	**$2500.00**

Now is the time to get ready for 1908 by selling some Cadillacs this Fall and getting trade started which no other car can take away from you.

Cadillac

Cadillac Motor Car Co., Detroit, Mich.

Members of Association Licensed Automobile Manufacturers

Mr. Dealer:

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1908?

Are you handling the right line of cars?

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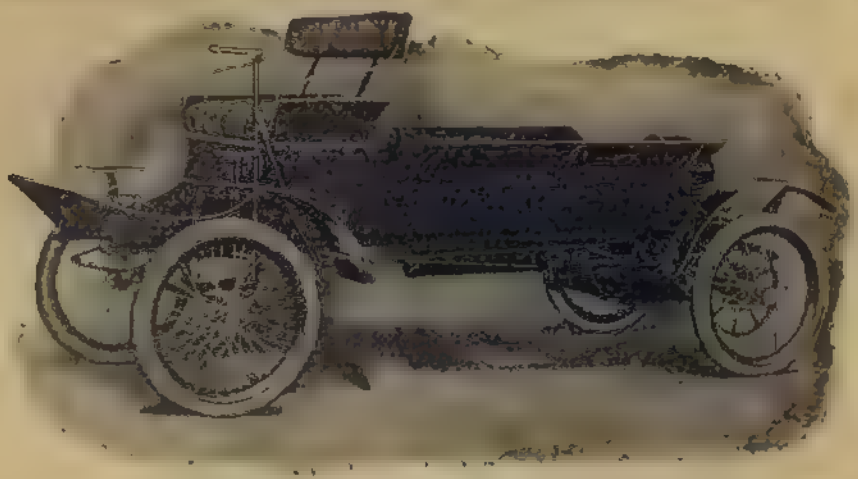
Cadillac Motor Car Co., Detroit, Mich.

Members of Association Licensed Automobile Manufacturers



1908 DELIVERY CAR

MODEL D. C., 4 H. P., $550; 8 H. P. $650

Fitchburg, Mass., Sept. 25, 1907.

WALTHAM MANUFACTURING CO.,
Waltham, Mass.

Gentlemen

Perhaps you may care to hear of a trip that I made July 4th to demonstrate the good qualities of my Delivery Car—Model DC 4-HP.

There is a young man here who has been talking of buying one to use on a poultry farm. He had called upon me twice and I had called on him some six or eight times, and I felt very sure that if I could make a good demonstration, I could make a sale, so I agreed to meet him at ten o'clock, July 4th, and we would go up to his farm which is about eight miles out from the city. I met him as agreed, and as he had a friend with him I had nearly 200 pounds extra load. The combined weight of us three was 646 pounds. For the first five miles I was well acquainted with the road, then we turned on to a road that I had never been over and for three miles I drove my car over the roughest and worst road that I ever want to see. There were places where grass had covered the entire width of the road and other places where one side was washed out, there were deep gullies across the road, there were places where the brush was so close that the fenders on each side of car would hit. It was a steady ascent with no very steep grades but one that called for very careful driving.

At last I caught a glimpse of a house through the trees and began to feel better, but just before we reached the house there was a sharp turn in the road and all that we had passed was but play to what was before us.

We were at the foot of a hill some five rods long, covered with small pebbles and it was the steepest grade that I ever remember riding over, either with team or auto. But my faith in the little motor was strong and I started, about one-third of the way up I thought what if something should break. I would be in a fix, so I stopped and asked one man to get off and was behind with a rail to block the wheels in case of an accident to brake or power. But nothing happened and we reached the top in safety, and I want to say right here that I made a standing start on the steep hill and reached the top as quick—if not a good deal quicker—than a horse could, and the friction transmission did not slip.

That was the worst hill on the trip for the rest was easy. I stopped and waited for the man to come up, looked the machine all over, oiled up, and soon reached our destination.

When we were ready to return I asked if there was another road home. He said "Oh, yes, go about half a mile and we would have State Road all the way home.

I have run my car over 3000 miles and the friction is in fine condition yet. All the trouble I have had has been in the tires. Nails and glass bottles are bad for rubber.

Yours very truly,
W. A. YALE.

Write for information and illustrations of all 1908 Models
Discounts quoted dealers in unassigned territory

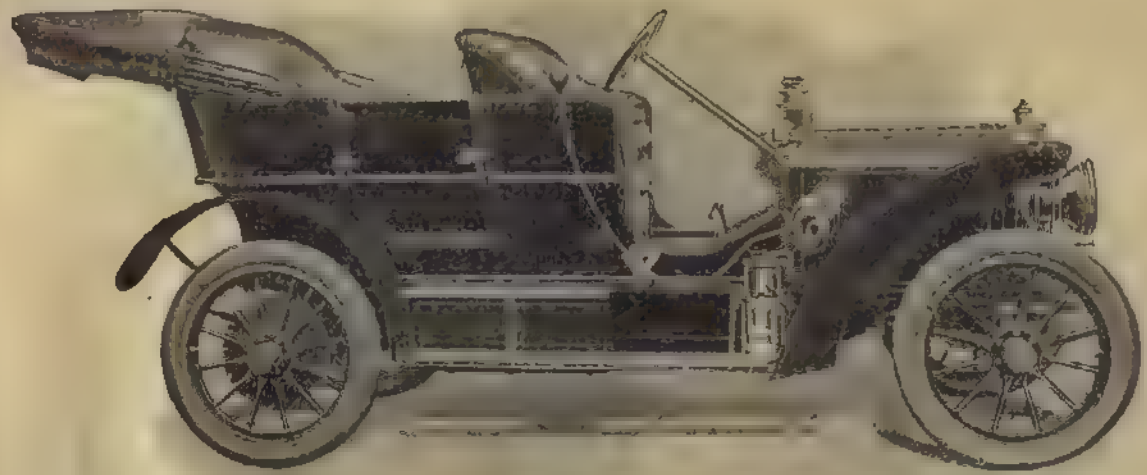
Waltham Manufacturing Company
WALTHAM, MASS., U. S. A.

NEW YORK BRANCH
1615 Broadway

CHICAGO DEPOT
433 Wabash Ave.

BOSTON SALESROOM
84 Huntington Ave.

Members of Ass'n Licensed Auto. Mfrs.



"Isn't it Great?"

The Great Smith four-cylinder touring car for 1908 is as dependable as ever it looks just as good and it behaves just as well These are the big things that count Then come the little things, and this is where we have made improvements that have materially **increased the general efficiency of our 1908 model**

The addition of roller bearings on the auxiliary shaft makes far less noise and more power The tonneau door has been made two inches wider, and a quadrant has been placed over the steering wheel giving better control of the throttle and spark levers.

Price, including Lamp Equipment - $2,650.00 Price, including Lamp Equipment and Pantasote Top : $2,775.00

OUR 1908 LITERATURE IS NOW READY

SMITH AUTO COMPANY, *Manufacturers,* **Topeka, Kansas, U. S. A.**

THE SMITH MOTOR CAR CO., Sole Distributors

The Neverout

TRADE MARK

New Idea

is not an experiment, but a demonstrated

two flames and two reflectors

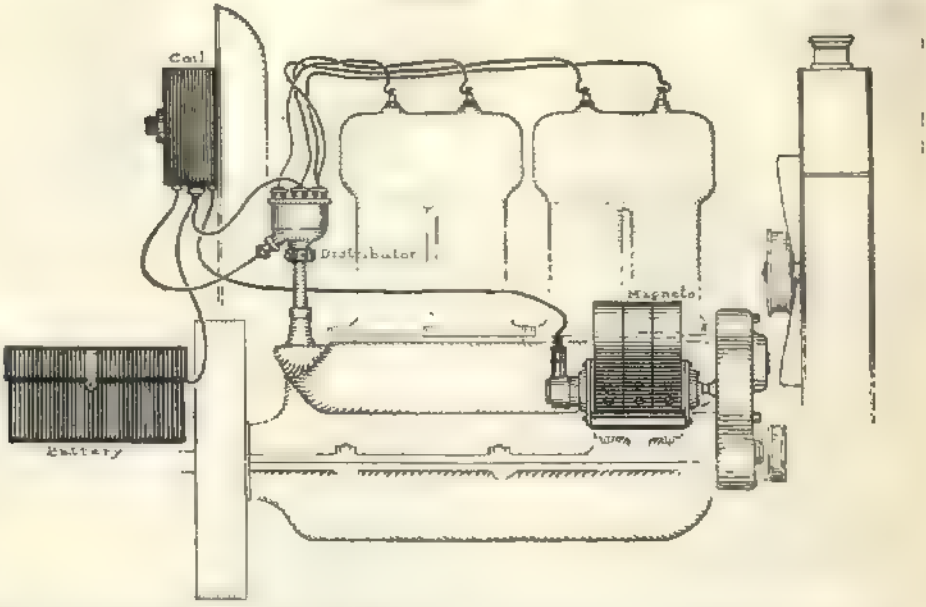
Safety Gas Producer

Rose Mfg. Co.

Philadelphia, Penn.

THE 1908 HOLLEY
High Tension Ignition System

(Patents applied for)



The simplest dual ignition system in the world.

The Holley Magneto, a Battery, a Switch, a Timer, Coil, Distributor, and Spark Plugs.

The Magneto is the same that you already know—unlike any other, and the most efficient made.

The Switch, mounted on the Coil, causes the primary current from either the Magneto or the Battery—according to switch position—to flow through the Coil.

The Timer and Distributor are separate from the Magneto, on a half-time shaft of the Motor, so that the Magneto can be removed in a moment without disabling the car.

The Coil has a trembler, which is in action only with the Battery—not with the Magneto. The same spark plugs serve in either case

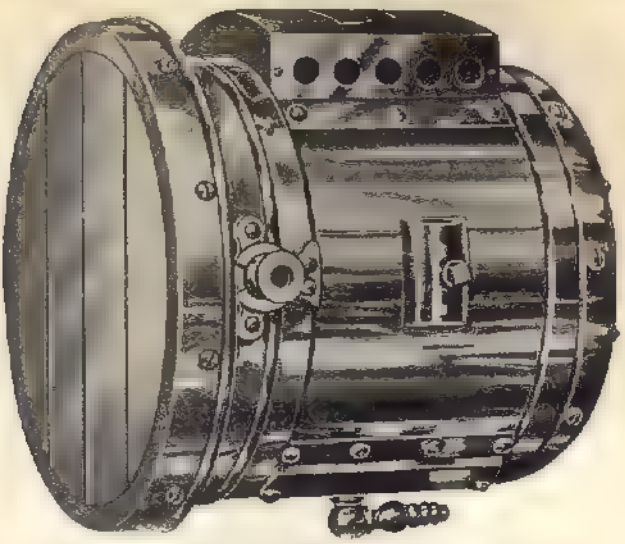
Compare this with the ordinary double ignition systems, and you will realize the great saving in moving parts, complication and expense.

GUARANTEE.

Our 1908 Model "S" Magneto is guaranteed free from defects in material, workmanship or operation. We will make good by repair or replacement any machine or parts of same proving defective within one year from date of sale.

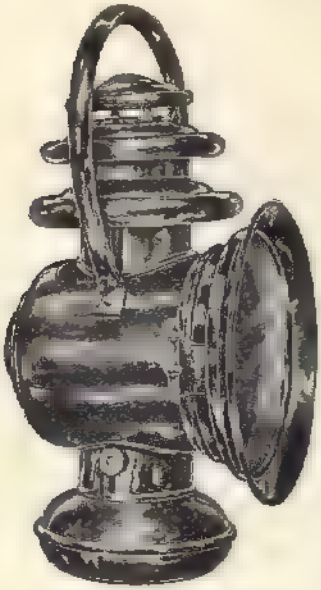
HOLLEY BROTHERS COMPANY,
Detroit, Michigan.

LOOK 'EM OVER and see the SELLERS FOR 1908

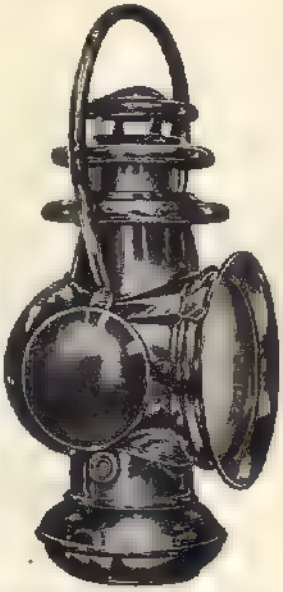


⅛" brass body reinforced with extra bands ⅜" thick. Full size Bausch & Lomb Mirror, Adjustable Focus

Double Generator, Heavy Gauge brass, Automatic cut off Valve, water jacket cast base



Large size side oil lamp Heavy gauge brass, silver reflectors; perfect draught, will stay lit.



Handsome tail oil lamp, heavy gauge seamless brass bodies. Fine semaphore glass, combination prop for round or flat bracket; will stay lit.

Very handsome square lamp, heavy gauge brass, silver reflector, perfect draught, will stay lit.

PRICES, QUALITY, DELIVERY IS WHAT WE OFFER

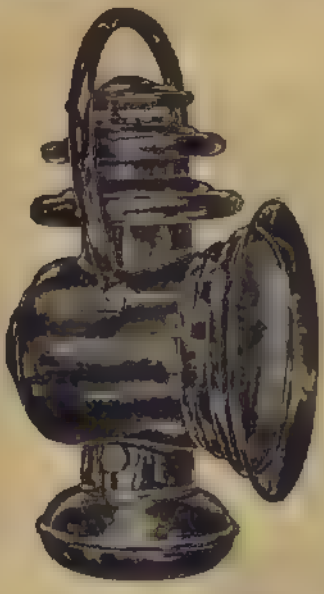
Have you received our 1908 booklet showing "What's What" in the lamp business? See what we have to offer—don't overlook our oil lamp proposition.

See us at the Palace, EXHIBIT 151

Manhattan Screw and Stamping Works, New York

U. S. Selling Agents, MOTOR PARTS CO., 25 W. 42nd St., New York

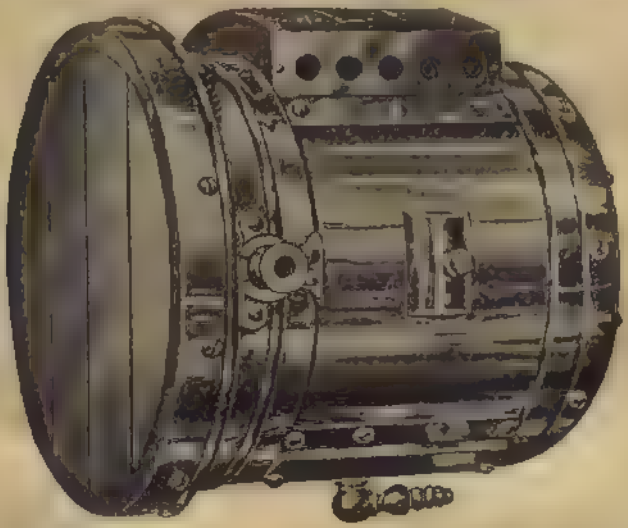
HERE IS THE CORRECT 1908 LAMP EQUIPMENT



Large size side oil lamp. Heavy gauge brass, silver reflectors, perfect draught, will stay lit.

Handsome tall oil lamp, heavy gauge seamless brass bodies. Fine sem aphore glass, combination prop for round or flat bracket, will stay lit

Very handsome square lamp heavy gauge brass, silver reflector, perfect draught, will stay lit.



⅜" brass body, reinforced with extra bands ⅛" thick. Full size Bausch & Lomb Mirror, Adjustable Focus

Double Generator, Heavy Gauge brass, Automatic cut off Valve; water jacket cast base

If you select any of these lamps you will make no mistake, because they are the acme of construction and finish.

IN PRICE, QUALITY, and PROMPT DELIVERY

we can meet all competition.

Send for our 1908 booklet giving free particulars about our gas and oil lamps.

Manhattan Screw and Stamping Works, New York City

A Strong Statement—but a True One about the

The distinguished successes of the present automobile season, you can name on a very few fingers. And however you name them, the Elmore must come first.

First, we mean, in point of swift sales; the quick clean-up of the entire output; the call for more cars than our big plant could build; and the magnificent satisfaction which every Elmore in use is giving its owner.

Each Elmore season has surpassed the previous one---each year has seen its prestige grow greater and greater and greater.

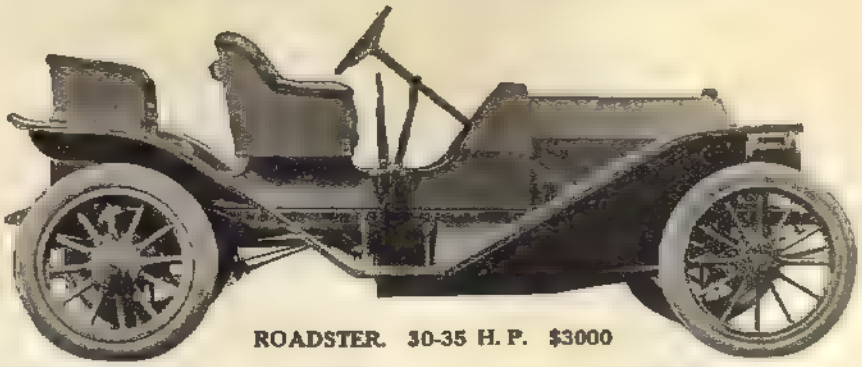
In 1908, we promise you that the Elmore will be the most perfect car of its class in America.

THE ELMORE MFG. CO.

1004 AMANDA ST., CLYDE, OHIO,

MEMBERS A. L. A. M.

Immediate Deliveries —All Models— 1908 Moon



ROADSTER. 30-35 H. P. $3000

MODEL C—5 Passengers
Wheel Base, 110 inches
Selective Type Transmission
4 Speeds Ahead
Eisemann High Tension Magneto
Dual System
34-inch Wheels
Weight, 2600 lbs.

MODEL D—7 Passengers
Wheel Base, 121 inches
Selective Type Transmission
4 Speeds Ahead
Eisemann High Tension Magneto
Dual System
36-inch Wheels
Weight, 3000 lbs.

ROADSTER
Wheel Base, 110 inches
Selective Type Transmission
4 Speeds Ahead
Eisemann High Tension Magneto
Dual System
34-inch Wheels
Weight, 2400 lbs.

WRITE FOR CATALOGUE

MOON MOTOR CAR CO, St. Louis, Mo.

We Manufacture

Aluminum and Sheet Steel Bodies

exclusively. We have an organization and plant to produce both quantity and quality. We have three and a half acres of floor space and our capacity is eight to ten thousand bodies annually. Our customers are those whose cars are known by the superior style and finish of their bodies.

If prompt delivery, fair prices and good design, construction, material and finish are what you are seeking, it will pay you to communicate with us-

KEYSTONE WAGON WORKS

500 N. Third St., Reading, Pa.

A National

Prophecy Fulfilled.

In the fall of 1905, when we brought out the

First Stock Six Cylinder Car,

made in America

We stated in our advertising

THAT IT WAS "An Innovation in Touring Cars."

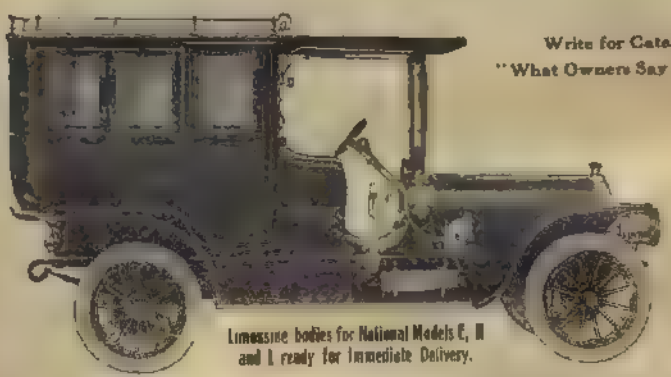
THAT IT WAS "A car very much ahead of the times."

THAT IT WAS "A car which would be extensively copied in the near future."

Note the number of manufacturers who are NOW building six cylinder cars.

THE 1908 NATIONAL LINE

Model T.	Model H.	Model N.
6 Cyl. 75 H. P.	6 Cyl. 50 H. P.	4 Cyl. 50 H. P.
TOURING CAR, LIMOUSINE.	TOURING CAR, LIMOUSINE, ROADSTER.	TOURING CAR, LIMOUSINE, ROADSTER.



Limousine bodies for National Models F, H and I ready for Immediate Delivery.

Write for Catalogue and Booklet "What Owners Say About Their Nationals"

NATIONAL MOTOR VEHICLE CO.

1003 East 22nd St., Indianapolis, Ind.

Member American Motor Car Manufacturers' Association, New York

1908 REO

The Car that shows why

Every REO shows why from beginning to end.

The big, handsome, powerful touring car; the swift, sporty, gentleman's roadster; the natty little runabout—all are strong, simple, able and sensible; easy to manage; speedy; smooth-running, comfortable; free from complications; full of style; and doing the work of cars that cost twice the money to buy and to operate.

Their inmost mechanism, down to the smallest detail, shows why these qualities are there; and the incomparable REO performances, both public and private, show why every REO will make good every time.

REO 5-passenger Touring-car $1250; REO Gentleman's Roadster $1000

REO 4-passenger Runabout $650

Prices f. o. b. Lansing

Write for the REO "Show Why" catalogue.

R M Owen & Company, Lansing Mich.

General Sales Agents for the

REO Motor Car Co.

The New REO Roadster

Touring car [illegible] with wheels. [illegible] an hour. 2-passenger seat, with trunk [illegible] rear, convertible into a 2-passenger seat. $[illegible] f. o. b. Lansing, Mich

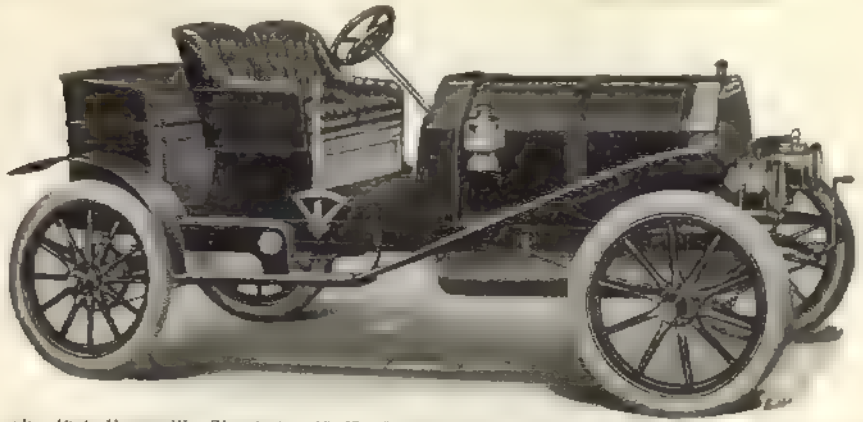
The wheel base is 70 inches. The front wheels are 38 inches diameter, and the rear wheels 40 inches diameter, all equipt with 1¼-inch solid tires.

The load is carried on four arched springs which are 37 inches in length with 7 inches camber, which with an equal distribution of load on all four secures easy riding, and the makers claim that the Pontiac on rough roads with its combination of high wheels, solid tires, resilient springs and correct distribution of load equals the pneumatic tired car for comfort.

With leather quarter top and curtains, lamps, horn, etc., complete, the cars sell for $650

Changes in Simplicity Cars for 1908

While the lines of the 1908 Simplicity Cars, built by the Evansville Automobile Co., of Evansville, Ind., remain the same, they have made improvements in a few details, the most notable being in the transmission.



The 1908 Evansville Simplicity 40 H. P. two-cylinder. Wheel base, 105 inches, tires, 34x4 inches. Friction change speed gear to countershaft with side chains to the rear wheels. Standard equipment with auto chime, 5 lamps and generator, complete $2500

A specially prepared fiber is now used on the friction wheels, making contact with the two large driving discs. These large driving discs are simply cast iron machined very smooth. This the company find after exhaustive tests to be far superior to any other friction metal they have tried. While in previous years mineral tanned leather was used on these large driving discs and cast steel surfaces on the small driven wheels, the present change from leather to fiber composition has been made chiefly on account of the greater ease in replacing the new friction material on the discs. Before, it was necessary to take down the engine shaft, but now the change can be made by the removal of only two bolts. Each half of the jack shaft may be pulled down separately, allowing the small friction wheels to be easily removed and refaced with friction material when it becomes necessary.

The springs are placed directly under the prest steel frame instead of on the side, as heretofore. This gives a much neater construction. The governor mechanism has been changed allowing the use of one straight short rod from the throttle to the governor arm. The steering gear has also undergone a change, and the controlling levers are placed directly above the wheel on a stationary sector, and do not rotate with the steering wheel. Rods with a special equalizing device are now used on the brakes instead of cable. The same original method of supporting the engine on the large swinging bar is still employed, but the engine power has been increased by changes in the cams and valve openings. The shape of the radiator and hood have also been changed, decidedly improving the looks of the car. Both the front and rear axles have been made heavier. The rear axle consists of a round solid steel bar with spindle machined thereon, no brazing being employed whatever. 34x4 inch tires are employed on all four wheels.

Four more concerns have been elected to membership in the American Motor Car Manufacturers' Association, making a total of forty-nine members. The latest concerns admitted are Reliance Motor Truck Company, Detroit; Gaeth Automobile Works, Cleveland; the Imperial Motor Car Company, of Williamsport, and the Kingston Motor Car Company, of Kingston, N. Y.

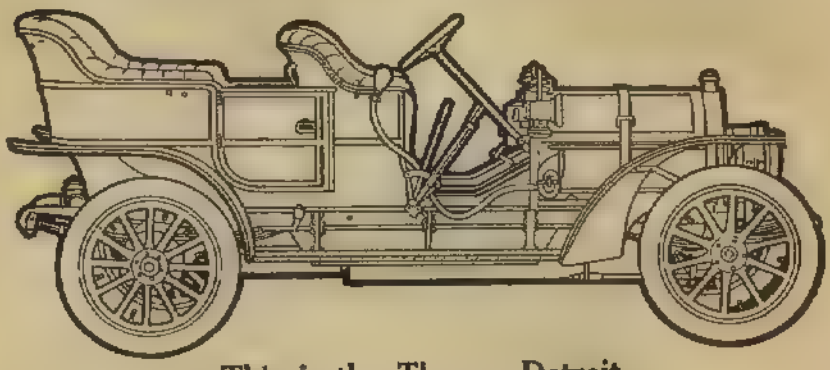
The new White factory at Cleveland is a one-story structure with saw-tooth roof, and contains many novelties in factory construction. A great central corridor, 600 feet long by 30 feet wide, is used solely as an avenue of communication between the other units of the plant. There is a basement under every department for the storage of material, the basements communicating with the main floor by means of electric elevators. The buildings are so thoroly fireproof that they are not insured, the company carrying its own risk.

Thomas

1908

4 Types of Chassis, 19 Types of Bodies

Absolutely the most complete line of ***reliable*** cars with reserve power and the prestige of the Thomas name.



This is the Thomas Detroit
4 Cylinder, 40 H. P.

A marvel of lightness and smoothness. It has dash and style in appearance and action that fascinates the expert. With good, wide, roomy seats for five—plenty of room—plenty of reserve power—finely, luxuriously finished—it is absolutely the most for the money in automobiles to-day.

Because of our great increase in facilities, we propose to extend our trade to territories hitherto neglected, and cordially invite all automobile dealers and users to visit our factories for demonstrations and inspection. Pamphlets and photographs will be sent on request.

E. R. THOMAS MOTOR CO.

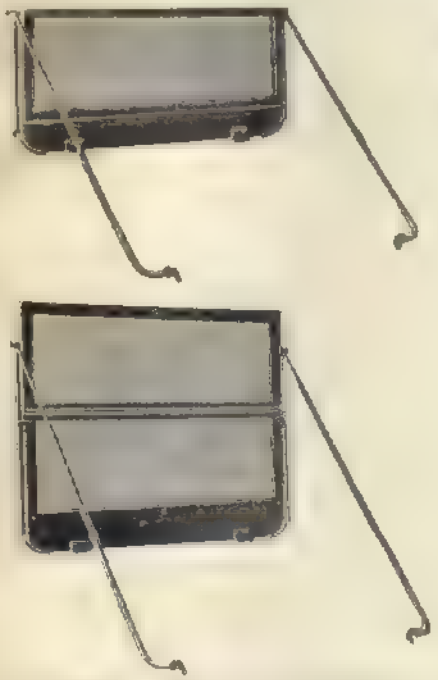
Member
A. L. A. M.

BUFFALO, N. Y.

"Smith" Folding Wind Shield

Joseph N. Smith & Co., Detroit, Mich., have just brought out a folding wind shield, which is made in two sizes, viz.: 42 and 46 inches wide, according to width of dash to which it is fitted.

The frame of this shield is made of wood as narrow as is possible to obtain sufficient strength. The edges are bound in brass and the side rods are telescoped so that when the brace is raised to put the shield in erect position, the joint in the shield is thoroly braced, making it as rigid as tho it were a solid shield without any break, and by this arrangement a single brace can be used which holds the shield in either erect or folded position. These braces are provided also with a telescope joint which



The "Smith" Folding Wind Shield. Shown in Shield in Erect and Folded Positions

locks firmly in position, needing only to be loosened when the shield is to be raised or lowered and then tightened into position again.

A special spring lock is also provided, which secures the top sash when it is down, and absolutely prevents any rattle as the lock always pulls the top sash in against two rubber bumpers.

Instead of hinging the shield at each side as is usually done with a folding shield they have provided a continuous hinge across the entire shield which not only makes a more secure joint but at the same time stiffens the center of the frame, which is made very narrow, both sides of the sash being only 1¼ inches or ⅝-inch on each top and bottom sash.

The glasses in top and bottom sashes are the same in size, and when folded come exactly opposite each other.

At the bottom of the sash is a 5-inch board, which can be cut out to fit the different types of dashes, doing away entirely with the necessity of a special board under the shield for fitting on to the dash.

Two types of Dash Brackets are provided, one for wood dashes and one for metal dashes.

The "Baby" Auto Torch

This torch is marketed by the Hine-Watt Mfg. Co., 58-60 Wabash avenue, Chicago, and is a necessary adjunct to complete the repair outfit of the automobile. It burns gasoline and can be filled from the supply of the auto. It occupies a space of three square inches and will burn two hours on one filling. It burns equally well in any

The "Baby" Auto Torch.

position and owing to its size, will reach out of the way places and corners. The makers claim that it is perfectly automatic, has no valves or cocks to get out of order lights with a match, requires no pumping of air, and is always ready for use. The list price is $2.00.

The Firestone Tire & Rubber Co., of Akron, Ohio, advise us that Mr Robert J. Firestone has been appointed sales manager of this company, with headquarters at Akron.

Van Rooven Sales Co. has located at 1655 Broadway, N. Y., for conducting an automobile supply business, and is representing W. F. Polson, of Buffalo, N. Y., manufacturer of robe racks, tire holders, valve lifters, combination tire tools, wheel pullers, storage jacks and glass wind shields; also the Automobile Supply Mfg. Co., of Brooklyn, N. Y., manufacturers of lamps, horns, reeds, bulbs and screens.

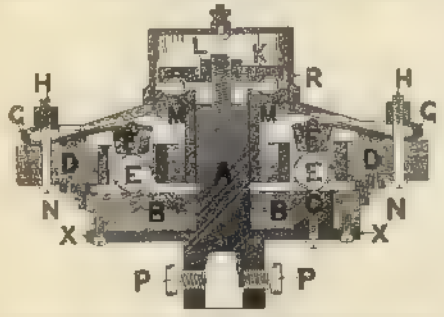
The "Darmac" Commutator

The accompanying sectional view shows the construction of the Darmac commutator, recently brought out by the Darmac Commutator Co., 220-222 East Fifth street, St. Paul, Minn.

The commutator is built entirely from tool steel and special friction fiber. The revolving points of contact are self-cleaning, presenting always a new face of contact and preventing carbonization.

The following is a description of its construction and operation:

The revolving axle A is made with its lower end hollowed to fit any shaft, and is fastened in place by use of three set screws P. This piece has a large circular flange X, to which is fastened the tool steel contact block C, held in place in the fiber part B



The "Darmac" Commutator, sectional view, lettering explained in text.

by a screw sweated in. The stationary portion of the commutator consists of a fiber framework D carrying the binding posts H. Close to the centre of this frame are carried the balls E, half inch in diameter, which are contained in steel sleves of practically the same diameter. Above the balls are short tool steel plungers F, against the outer ends of which are fastened the flat steel springs G The springs hold the balls down to contact with piece C in the revolving part of the device. The outer ends of these springs are curved into C shape so that by adjusting the ball thrust bearing K the pressure of the balls on contact piece is varied and then locked at desired tension by lock nut L. To the lower surface of frame D is bolted a dust ring N, and on top of frame is fiber covering M, the two covering parts with cap R making a dustproof commutator. The balls E for making the contract are hardened and having four bearing points offer little friction. They are in constant contact with the top of fiber part B, and therefore out of circuit except when passing over contact piece C.

The list prices are as follows: 1, 2, 3 and 4-cylinder timers, $20 each; 2, 3 and 4-cylinder timers, with distributor, $25 each; 6-cylinder timer, $25, with distributor, $30.

"Trenton" Tires and Tubes

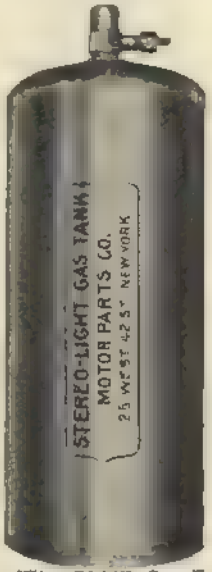
Trenton Rubber Mfg. Co., Trenton, N. J., manufacture a line of solid vehicle tires and inner tubes for pneumatic tires. The solid tires are of the usual form.

The Trenton inner tube is made of the best Para rubber with just enough compound material to insure proper vulcanization and strength. It may be inflated before inserting in the shoe, being amply strong, and following the practice obviates the danger of pinching or chafing. The makers claim that this tube does not elongate even after long use and can be taken out and replaced any number of times without pinching. It is made seamless, triple calendered, spiral wrapt, has a smooth channel way, heavy walls and ends spliced by a special process. Prices range from $4.30 each for a 26x2½ to $19.70 for a 40x5.

This company also makes rubber matting, which is furnished in 50-yard rolls in several thicknesses from 3-32 to ¼-inch, weight ranging from 6½ lbs. to 19 lbs. per square yard.

The "Stero-Light" Gas Tank

The Motor Parts Co., 25 West Forty-second street, New York City, have recently placed on the market a new gas tank, known as the "Stero-Light," which the manufacturers claim gives a pure white and brilliant light.



The "Stero-Light" Gas Tank.

The tank can be placed in any position. It is charged with purified gas and has a large capacity. They claim it costs less than carbide and is more convenient than a generator. It is listed at $15.00. Empty cans can be exchanged for full tanks at dealers for the cost of recharging.

Motor Car Equipment Company, 55 Warren street, New York city, have opened a new store at Broadway, southeast corner 55th street.

The "O. K." Battery Connector

The O K. Battery Connector, manufactured by H. W. Munyan, 24 Shirley street, Worcester, Mass., is made of one solid piece of heavy composition spring wire, covered with a first class heavy insulating material, which is capt at the ends, and terminates in a small spring coil with end of wire clipt off at a thirty-degree angle, sharp edge out.

The "O. K." Battery Connector

When the nut is set the coil spring constantly pushes against it, keeping the contact safe and preventing the nut from backing off thru vibration, which is also guarded against by the sharp edge at end of the wire catching and holding on the metal of the nut itself. The whole gives a split washer effect

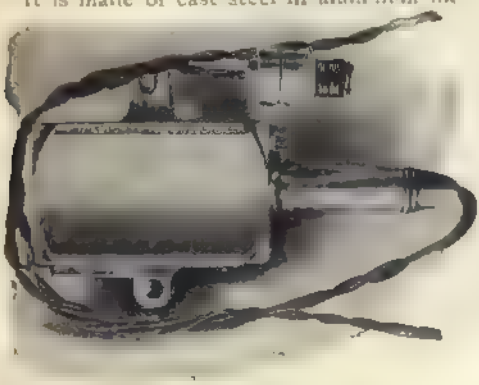
The spring tension takes up vibration and prevents breaking of the connector by crystallization, so that both broken and loose connections are absolutely avoided

The advantage claimed for it is that the solid wire is a better conductor than the usual style with fine strands, and the spring coil gives a better flow of current The stiffness or spring of the wire keeps the ends in contact regardless of whether nuts are set or not

"Auto Eleck-Trick" Vulcanizer

The Auto Eleck-Trick Vulcanizer is the product of James L. Gibney & Bro., 211-213 North Broad street, Philadelphia, Pa

It is made of cast steel in aluminum finish, and has a thermometer to register the correct heat. It is also provided with an automatic heat regulator which will regulate the temperature automatically from 250 to 300 degrees, as desired, by setting the regulating screw. Turning to right increases the heat and turning to left decreases the heat



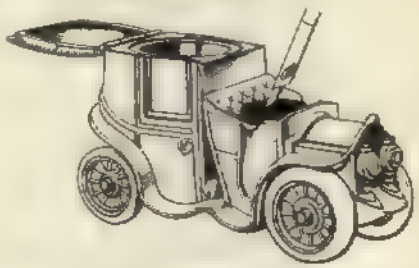
The Auto Eleck-Trick Vulcanizer

The vulcanizer is very compact and takes up very little room in a tool box, it being only 6 inches wide. The vulcanizing surface is 6 inches long and 3 inches wide. The total width of vulcanizer including handle is 11½ inches. It can be used in connection with a 110 volt, alternating or direct current

The vulcanizer is furnished complete with eight feet of electric wire, with plug to screw in socket of electric bulb; one asbestos pad; one clamp to clamp vulcanizer over shoe; enough raw-stock, cement, and all necessary materials for making from ten to twelve vulcanized jobs.

Miller's Automobile Inkstand

Charles E. Miller, 97-101 Reade street, New York City, jobber, exporter and importer of automobile specialties, is offering besides his large line of automobile jewelry, a miniature automobile inkwell, illustrated herewith. The top of the car opens, revealing an inkwell. Other articles



Miller's Automobile Inkstand

made from the same model are an ash receiver, match holder, jewelry case and pin cushion. All these are finished in a rich ormolu gold or French gray silver The length is 5¼ inches and the height 3⅛ in The price in either style is $2 each

The Racine Folding Chair Company, of Racine, Wis., are now manufacturing the Freeman Auxiliary Folding Chair, described in our August 1906 issue, page 160. The chair is designed for the use of extra passengers in the tonneau and will resist the weight of 300 pounds. The frame work is made of enameled steel and the seat and backrest are now upholstered with a water proof material instead of velvet

The only complete summary of specifications and illustrations of 1907 cars is included in the Motor Car Review in the March number of the Journal, and readers who have not obtained a copy of this number should forward us 20c at once, as the number of copies on hand is limited To those who will send us $2 for one year's subscription, we will give a copy of the March Journal free of charge in addition to the twelve numbers to which they will be entitled

The "Schug" Spark Coil and Timer

The Schug Electric Mfg. Co., 48-54 Champlain street, Detroit, Mich., are offering two new ignition specialties, a Lacoste type timer and a new type of Schug Spark Coil

The "Schug" Spark Coil, Style B.

The chief feature of their Style B, Spark Coil, is a new hammer vibrator, which is very simple and is designed for high speed work. It consists of a plain metal strip with a block attached to one end, which vibrates between the core and the contact screw. The remainder of the coil is of standard construction, with high grade silk covered wire winding and insulated thruout

The Schug Timer, Lacoste Type

Their timer, which is of the Lacoste type, is made with tool steel contacts set in fibre insulation. The case is aluminum, with a screw cover fitted with beveled glass, which permits the action of the device to be noted without taking off the cover; it has ball bearings and binding posts on the back, so it may be mounted in a rather small space if necessary

Another one of their accessories is a switch known as the "Peerless," and which is made with a detachable lever which the driver may carry in his pocket, making it rather difficult for anyone to start the car without this handle, it being so made that a piece of wire or metal cannot be used in its place. A small lever is used to throw the two sets of batteries in multiple

Goettler's Auto Goggle Cap

The M. Goettler Hat Co., 1260 South Broadway, St. Louis, Missouri, are offering to the trade Goettler's Auto Goggle Cap, which we show in the accompanying cuts, showing the goggles in use and also folded back in the brim.

Goettler's Auto Goggle Cap, Showing Goggles in Use

It is uniquely fitted from the inside with specially devised goggles, which fold back into the brim when not in use, without interfering with the comfort of the wearer, as it conforms to the head. It has extra long patent leather visor, green underneath the

Goettler's Auto Goggle Cap, Goggles Folded Back Into the Brim

shade to protect the eyes. It is made in ladies' and gentlemen's styles, of soft, pliable Russian waterproofed leather and lined inside with best quality silk. The list price is $3.00

The Willyoung Appliance Co., Ludlow Station, Yonkers, N. Y., have recently absorbed the George J. Shultz Co., of New York City, manufacturers of the Diamond spark plug. This Diamond plug, which is now being manufactured by the Willyoung people, was described in our 1907 May issue, page 148 They have leased for a term of years a two-story factory at Ludlow Station, Yonkers, having about 5000 square feet to a floor, where they have installed an up-to-date and complete equipment for the manufacture of ignition apparatus, speed measuring apparatus and combustion engine accessories generally.

Gaeth 1908 Type XV Touring Car

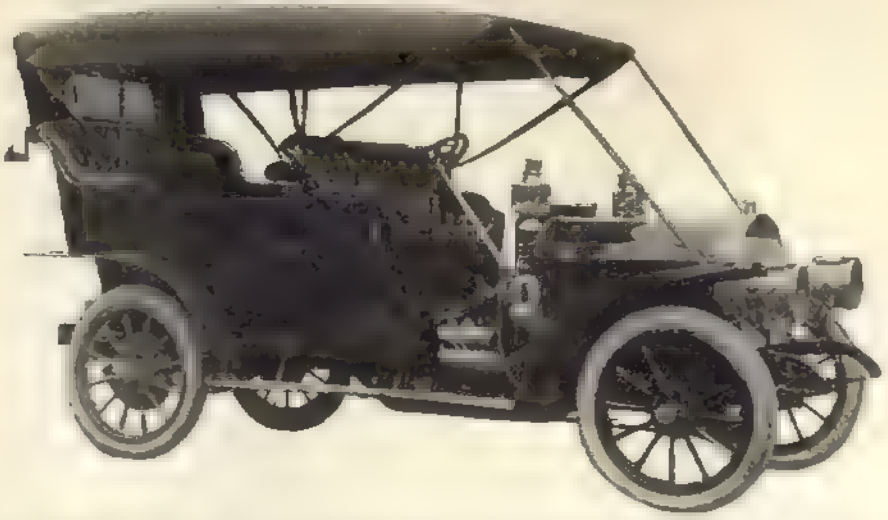
The leading model of the Gaeth Automobile Company of Cleveland, O., for 1908 is a handsome touring car, rated at 35 horse-power, and selling at $3500. Known as Type XV, it follows very closely the construction details and appearance of the Type XII. of 1907. The cylinders, however, are a trifle larger than last year, and several refinements suggested by the experiences with this car have been adopted.

The cylinders are four vertical, cast in pairs and having the valves in the head on opposite sides with the cylinder walls, heads and valve chambers integral. The cylinders measure 4⅞ by 5¼ inches.

The water capacity of the system is 10 gallons. The flow is from the base of the radiator thru a 2-inch hose to the lower front jacket of the first cylinder pair. Communication between the front cylinder jacket and that for the rear pair is by a short 1-inch pipe connecting the adjacent faces of the castings. The return flow is by a pipe from the top of the jackets to the radiator top. This piping is of variable diameter, that portion leading from the rear cylinders being 2 inches, but increasing to 2½ inches where it is joined by the branch from the two forward cylinders. A belt driven cooling fan is employed.

THE CARBURETOR.

The carburetor which has been used successfully for several years, is now being placed on the open market by a Cleveland concern. It has a three fold control. The air entering from below, the entering gasoline and the mixture passing to the motor, are all controlled simultaneously from the lever at the top of the steering wheel. The carburetor is of the separate float chamber style, and its mixing chamber is a vertical cylindrical space fitted with a rotable needle valve. This has in its base two radial V-shaped openings for regulating the air entrance. In its sides there is a circular opening for controlling the exit of the mixture. A part revolution of this throttle also effects a part movement of the needle valve in the nozzle, so that with a larger entrance there is a greater flow of gasoline. No auxiliary air valve is used, and it is possible to set the gasoline valve for a low running point and go up to highest speed without further regulation.



The 1 08 Gaeth Type XV Touring Car four-cylinders, 4⅞ by 5¼ inches, rated at 35 H. P. Mo[illegible] the [illegible] spark ignit on is used. The wheel base is 112 inches, tires 34 by 4 inches, weight approximately 2700 pounds; price, $3500.

The Gaeth method of grinding piston rings and cylinders which has been used for several years is continued. In this the piston rings are secured in the piston grooves by an adhesive, and are held rigidly in place thruout the grinding process. When the adhesive is dissolved the rings are already in position without the necessity of springing them into the grooves.

Metal to metal gears are used on the cam shaft, and they are placed inside of the cam shaft chamber and run in oil, thus eliminating noise. A special jig has been rigged for grinding the cam shaft gears in place and mating them. At the end of the cam shaft there is an adjustable bearing by means of which the gears are adjustable to wear.

The thermo-syphon system of cooling cylinders, which has been found very satisfactory in many long hard runs, has been continued this year. The Fedders type of radiator will be used. The extra tank of water which has been carried back of the radiator is continued, but the lower surface of the tank is grooved, and the fan passes through it, assisting in radiation.

LOW TENSION IGNITION.

The ignition system is of the low tension make and brake form, with current supplied from a low tension magneto, carried

on the motor bed at the left side of the front. It is driven by a gear, enclosed with those on the half time shaft. The make and brake devices are carried in openings directly above the intake valves. The method of operating the hammer and anvil devices is unique. One vertical shaft rises at the right side, opposite the space between the front and rear cylinder pairs, and is driven by a gear from the intake cam shaft. On top of this shaft is a set of small cranks which work horizontal push rods that strike upon the triggers on the upper end of the moving electrodes. Variation of the spark is from the steering wheel.

The Gaeth clutch is of the contracting band type. It consists of a leather lined band, clamped upon a face on the drum of the fly-wheel, and is 13 inches in diameter, and 1½ inches wide. A cone on a vertical shaft pushes between a pair of swiveled arms at the center and contracts the band.

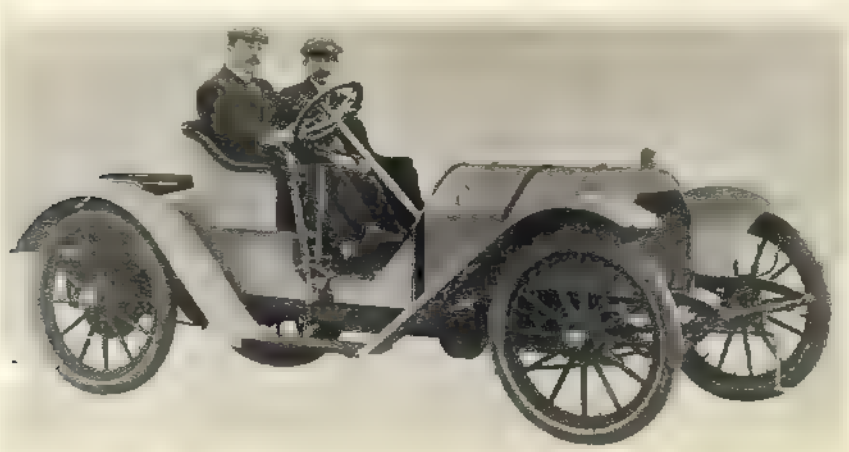
Variations in speed are accomplished by means of a sliding gear transmission, giving three forward speeds, all obtained on the progressive principle by a backward movement of the speed change lever, giving respectively all the changes from direct to reverse. Both shafts in the gear set are carried on plain bearings. The bearings and case are split horizontally, and the bearings which are special babbitt shells can be removed for adjustments or renewals. Chain oilers are used for these bearings. The gears of the speed changes are made larger and heavier than customary.

There is a double braking system consisting of two separate drums, one within the other, one set contracting upon the outer drum, and the other expanding within the inner drum. Those for ordinary use are leather lined bands acting upon the outer wheel drum, which is 14 inches in diameter and 1½ inches wide. The emergency brakes are of the expanding type and have bronze shoes, acting upon a 13-inch inner drum.

The Gaeth framework is of standard prest steel construction, and has the side members parallel thruout their length. These members are 4½ inches wide at the center, and are made of 5-32 stock. Springs this year, are made of a special crucible steel guaranteed for one year. There are four semi-elliptic springs, those in front are 44 inches long, and those in the rear 50 inches long. The forward axle is an I-beam forging with a small drop in the center, and provided with jaw endings for Elliott steering knuckles. The car has a wheel base of 112 inches, has 34 by 4-inch tires, and weighs approximately 2700 pounds. It has space in the tonneau seat for three, and there are two swinging folding seats.

In regard to performance the company state that the first model of this type went thru the Glidden tour without showing a mechanical defect, and without opening the bonnet seals while in the recent Cleveland contest, securing the only perfect score in the latter contest.

A number of 1908 car descriptions are contained in this issue of the Journal, and over one-half a hundred more have appeared in the last five issues. From no other source can you obtain the same information in regard to 1908 models. If you desire to obtain descriptions of all the cars that have been described, we will start your subscription with the June number if your remittance of $2 is received before our supply is exhausted. Cycle & Automobile Trade Journal, Forty ninth and Market streets, Philadelphia, Pa.



"The Second Imperial," manufactured by the Imperial Motor Car Company of Williamsport, Pa. F. P. Brand, Vice-President and General Manager at the wheel. The motor is 35 H. P. of their own design. Double ignition system with Eisemann magneto. Floating ring clutch with cork inserts, floating rear axle, selective type change speed gear. The frame is dropt so that the cardan shaft is practically horizontal giving a "Straight Line Drive." The wheels are 36 inch. A complete description will appear in an early issue of the Journal.

1908 Great Smith Cars

The Smith Automobile Co., of Topeka, Kansas, is offering for the season of 1908 a line of cars finished with straight line, French type bodies with divided front seat and straight panel behind. The tonneaus are extra wide, seating either three 200 pounds people, as the company states, or four people of ordinary size and the side doors are very wide and open to their full width. The seat fronts are polished, solid mahogany, and the upholstery is of the finest, buffed leather over curled hair and oil tempered steel springs. Pockets for goggles, maps, etc., are supplied on each tonneau door and carrying space is also arranged between the front seats, and there is room for a spare tire, satchels, etc., under the floor. The tonneau is accessible from the rear. A felt and metal lined refrigerator is supplied in the step box on the right side, and the corresponding box on the left side carries storage and reserve batteries. The models are all built upon practically one chassis, the general features of which have been but slightly changed over last years' car. The equipment consists of two side oil lamps, one rear oil lamp, two large head lights, gas generator, horn, tube and a complete set of tools, including tire repair outfit, pump, etc. A particular point made by this company is the fact that all parts of these cars, with the exception of the lamps, horns, and tires are

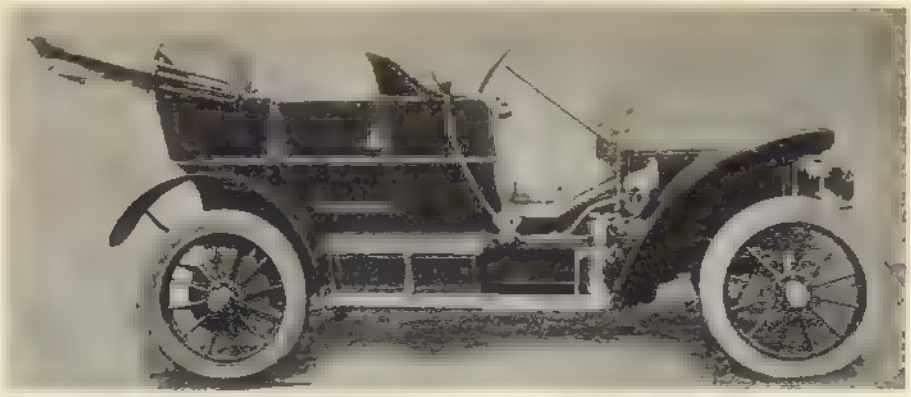


Fig. 1. 1908 Great Smith Car. The Chassis specifications of this machine are but slightly altered from last year's model. The engine has 4½ bore and 5 inch stroke. Its French rating is 24 H. P., but it is claimed it develops actually 45 H. P. The body is of the French straight line type with the seat fronts of polished, solid mahogany. Suitable carrying pockets are supplied. The particular Smith features, such as the gear shift lever which automatically disengages the clutch when moved for a gear shift and subsequently allows the clutch to engage, the cone clutch type of rear hub brake the speed multiple disc clutch running in oil; full elliptic springs, both front and rear, the removable top of the cylinder water jackets, the special Smith wiring device as described in previous issues are all continued in the 1908 cars. Weight 2,400 pounds. Price, $2,650 F. O. B. Topeka, including two side oil lamps, one rear oil lamp, two headlights, gas generator, horn, tube and complete set of tools, pump and tire repair outfit.

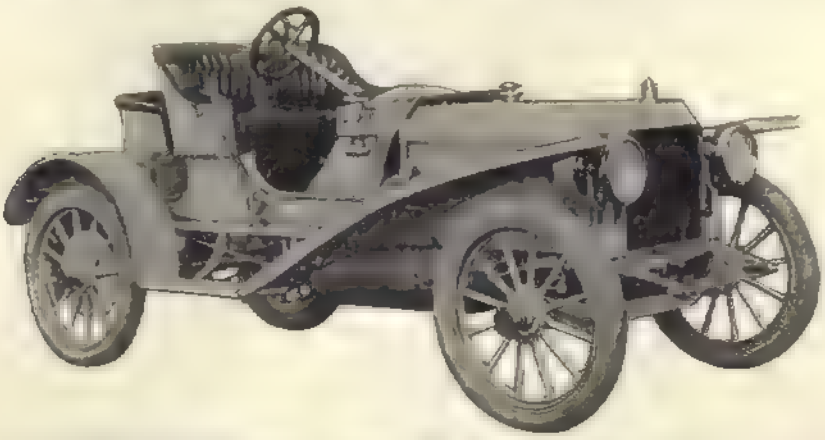


Fig. 2. 1908 Great Smith Runabout. This car has very similar chassis specifications to those of the touring car and is fitted with a runabout body as shown. With standard equipment the car sells for $2,650 F. O. B. Topeka. With rumble seat the price is $2,750.

point made by this company is the fact that all parts of these cars, with the exception of the lamps, horns, and tires are

made in their factory at Topeka. With this standard equipment both the "Tourer" and the "Roadster" sell for $2650. The motor is of the four-cylinder vertical type, cast separate, water jacketed, with valve chambers, integral, the cap over the water jacket being removable for cleaning purposes. The bore is 4½ inches, stroke 5 inches, the French rating being 24 H. P., but it is claimed the motor will develop 45 actual H. P. The crankshaft is forged with the grain running around the bends and is of high carbon, open hearth steel. All the bearings are extra large. The carburetor is a special float feed of Smith design. The three speeds forward and one reverse sliding change speed gear is operated with one lever at the right of the driver, which automatically releases the clutch, shifts the gears and allows the clutch to reengage without use of any foot pedal. This device has now been in use for several seasons and it is claimed to have given perfect satisfaction.

The clutch is of the multiple disc type and runs in an oil bath. The special Smith worm and internal sector gear is enclosed in an oil and dust tight case. The frames of all Smith cars are of "trussed" second growth ash sills, reinforced with ⅛ inch steel truss rods running over two kingposts 7½ inches in depth. The company states that this construction has been continually used for ten years and in no instance has it given any trouble; it saves about 100 pounds in weight over all steel construction and there is no trouble due to "fatigued" matter. The springs are 56-inch full-elliptic both front and rear, and the construction is such that no strain is put on them other than that of carrying the body. The front axles are high beamed steel drop forged; rear axles are tubular steel shells with special steel live axles upon roller bearings. The touring car weighs with full tank detachable rim and complete equipment 2400 pounds. The special "Stafford" cone clutch brake is used on the rear wheels. The brakes are operated by independent pedals, the hub brake pedal, which is lacking, first open the clutch and then applies the brake.

Two New Apperson 1908 Models

Apperson Bros. Automobile Company, of Kokomo, Indiana, announce that in addition to continuing Model J. R., 50-55 H. P. "Jackrabbit" runabout, and Model K, 50-55 H. P. Touring Car, they are now placing upon the market two new cars, Model M., a 30-35 H. P., four-cylinder, four passenger roadster, and Model S, a six-cylinder, 50-55 H. P. Touring Car

for $2750. The regular equipment on the four passenger car includes a folding top, and a three passenger body with the regulation chauffeur's seat, is optional. The entire car is built in the Apperson factory.

This new model has a four-cylinder water-cooled motor, with 4¾-inch bore and 5-inch stroke, rated at 30-35 H. P. The change speed gear is of the sliding selec

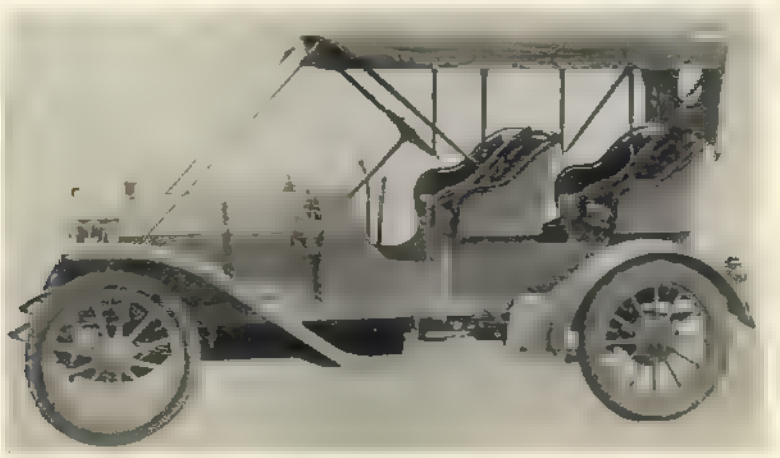


Fig. 1. The New Model M Apperson 30-35 H. P. four-cylinder, four-passenger roadster with top. Bore, 4¾ inches, stroke, 5 inches; sliding selective change speed gear, wheel base, 106½ inches; gage, 56; tires, 34x4 inches; price, including top, $2750.

The new model M, built with runabout body to carry four, with a double system of ignition thru the use of a magneto, and of storage battery with four unit coil, and having two independent sets of spark plugs on opposite sides of the cylinders, will sell

tive type, operated by side lever and gives three speeds forward and one reverse. The inlet and exhaust valves are on opposite sides and all valves are mechanically operated. The wheel base is 106½ inches, and gage 56. The wheels are 34

The R-S Twin Cylinder, 6 H. P. Motor Cycle with magneto drive. Price $275.

1908 R-S Motorcycles

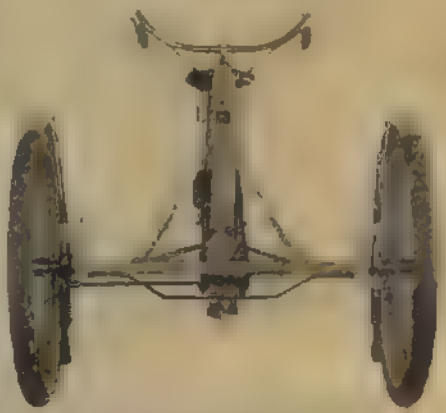
The Reading Standard Co., Reading, Pa., offer a great variety of models for 1908, having added to the Models A, 3 H. P., at $200, and B, 2¼ H. P., at $175, previously described in these columns; a

R-S Quick Delivery Motor Tricycle. Price $300. Made by the Reading Standard Co., Reading, Pa.

3 H. P., new gear driven model, at $225; a new 6 H. P., two-cylinder model, at $315; a 3 H. P., convertible tandem, at $275; a 3½ H. P., convertible tricycle, at $290, and a 3 H. P. motor van, at $300.

The R-S Motor Tandem, front top bar of which is removable, price $275

All of the R-S machines are equipt with R-S motors, with the exception of the 2¼ H. P., which is a Thor motor. The R-S motors have a mechanical valve motion and a new commutator cut-out, operated by the grip control, which prevents the contact spring from making its connection, and at the same time opens the relief valve. This device will be greatly appreciated by riders, as it saves batteries when coasting. In the R-S twin cylinder the valves are reversed on the two cylinders; that is, the valves on the front cylinder are on the left side, and those on the rear cylinder are on the right side, the object being to increase the cooling effect and assure the valves on the rear cylinder a good draft of cold air. Were they placed on the same side the valves on the rear cylinder would receive the hot air from the front ones. This placing of the valves necessitates two separate exhaust pipes,



The R-S 3-wheel Motor Cycle, front view showing the front spring suspension.

which enter opposite ends of the muffler. The R-S motor tandem, which lists at $275, is a special tandem construction, having a removable front top bar, giving a drop frame for ladies in front. The 3 H. P. tricycle, which is the first American production of this kind, also has a removable top bar, and guards are placed over all chains. The front axle is equipt with brackets on which can be placed either a seat for passengers or a delivery box. The front springs of the tricycle and also of the tricar are long, easy spiral springs, as shown in the front view of the machine.

The R-S 3-wheel Motor Cycle. front bar of [illegible] removable, making it suitable for ladies. The engine is 3¼ H. P. Guards cover [illegible] chains and the front axles are supplied with supports so that either a seat or delivery box [illegible] on front.

The R-S gear drive consists of [illegible] pinion gears of different sizes the gear [illegible] being an internal part of the motor base, the motor in this model is vertical, and a new compensating sprocket is used. More complete details and illustrations of these special points on R S machines will be given later.

Magneto ignition is an option on all R S machines, and special provision is made for the magneto on several models.

[illegible] have reserved the trade name "Excelsior."

ENGINE.

The engine, designed and manufactured by the Excelsior Motor & Manufacturing Co., especially for this machine, has a cylinder 3⅛x3½ inches, and develops 3¼ H. P at the rear wheel when running at a speed of 2000. It will drive the machine under favorable road conditions at a speed of from 45 to 50 miles per hour.

The engine has been designed especially for flexibility and grade climbing power and it is said that it can be run slowly enough to travel with perfect ease in traffic-crowded streets. The gears are hardened steel, and the exhaust valve and cam are made integral. The valves are easily accessible without removing the carburetor or exhaust pipe fittings, and are designed with a view to avoiding the possibility of loose cams, gears, etc. The valve action is said to be very quiet. The

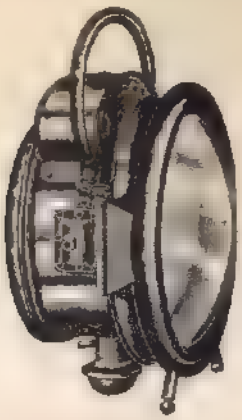
The "Excelsior" Motorcycle.

The "Excelsior" Motorcycle

Excelsior Motor & Manufacturing Co 233-237 Randolph street, Chicago, [illegible] recently entered the motorcycle industry as manufacturers of motorcycles their first offering being the "Triumph" machine described in our September number, page 206. They sprung a surprise, however, by appearing at the Madison Square Garden Show with a brand new model for which

1908 Saxon Lamp

The Saxon Lamp Company, 526-532 W. 28th St., New York City, has placed on the market for 1908 a new "Saxon" lamp, which was thoroly tried out in the recent 24-hour race at Morris Park at which event it was used on one of the contesting cars. The most noticeable feature of this lamp is its neatness and compactness, that is, superficially speaking, but it has been made exceptionally strong, and

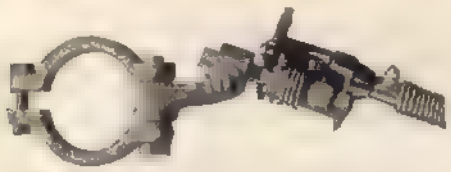


1908 Saxon Lamp, No. 400.

high grade construction has been adhered to thruout, the lamp being intended for use on the highest grade cars. An optical ground and polished bull's-eye lens, properly focused, is used. Wherever rivets are needed reinforcements are introduced to entirely prevent weakening of the construction, as might be the case where rivets were used alone. This lamp is being listed as No. 400

Improvements in the 1908 Loring Speed Gage

The Loring Speed Gage has been placed on the market for the 1908 season with few material changes in the instrument itself, the main improvement being in the method of carrying the pinion and shaft at the wheel.



New Swing Gear Release and Fixture used in connection with the Loring Speed Gage shown above for Spindle Clamp on a 1908 Packard car.

This device permits the gears to separate if occasion requires, to allow stones, sticks, etc., to pass between. It is adapted to clamp about the upright spindle of the knuckle the accompanying cut showing the fixture as used on the Packard car. The pinion and its bearing swing on a rod, between a collar and an arm, both of which are fixt to the rod. The arm acts as a stop for the bearing, which is prest against it by a spring encircling the rod. The rod itself in this case is carried by an arm extended from the attaching clamp, having a jointed connection to permit the pinion to be properly centered with the wheel gear, the two always acting together as a bevel gear drive. By this construction the pinion may be moved into closer mesh with the wheel gear or moved across its face, as may be necessary for adjustment, both adjustments being made at one place, and at the same time the gears are free to separate against the spring pressure The carrying extension of the rod may be on the pinion side of the bearing as shown, or on the shaft side if the device is clamped to the steering arm.

The maker of the Loring Speed Gage, Loring Speed Gage Co. 91 Marshall street Somerville, Mass., also makes an electric light attachment for night driving, which can be easily attached to the speed gage

A Financial Bulletin

The Henry W. Brooks, Jr., & Co. Public Accountants and Auditors, 15 Wall street, New York, in view of the numerous requests by their clients, for information pertaining to business and financial conditions in the automobile industry, are now publishing a "Financial Bulletin." In these the subjects of financial reorganization and adjustments, and the particular financial condition of manufacturers, trade conditions, and industry in general are discussed. Errors in corporate administration are clearly and fearlessly spoken of. Methods of factory organization are also dealt with.

The bulletins are punched for filing as it is believed they are of permanent and practical value, and suitable binders are supplied for $1 00

The December Journal will be the Chicago Show number containing a review of the Chicago Show, and description of all new things on the market that have not heretofore been described. The January will be the great Eighth Annual Buyers' Guide Special; the February number the Boston Show number, and the March number will contain the Eighth Annual Complete Vehicle Review. From no other source can you obtain all the valuable information which will be contained in these special issues. To make sure that you will not miss any of the numbers, subscribe at once. If you are not already a subscriber. Send $2 and we will start your subscription with any number desired, as far back as June. Cycle & Automobile Trade Journal, Forty-ninth and Market streets, Philadelphia, Pa.

The "Gabriel" Cut-Out Valve and 28-Tube Horn

A new cut-out valve and a 28-tube Gabriel horn are the latest products offered by the Gabriel Horn Mfg. Co., 1407 E. Fortieth street, N. E. Cleveland, Ohio.

The outlet of this new cut-out valve is of the same size as the inlet which fits

The "Gabriel" Cut-Out Valve.

the exhaust pipe, thus permitting the free and unobstructed escape of the exhaust gases. If necessary, a pipe may be attached to the outlet to lead the exhaust flame away from the frame of the car. The cut-out is furnished for steel exhaust pipes from 1½-inch to 2½-inch, outside diameter, also for 1½-inch to 2-inch iron pipe. The price of the valve only is $5.00; and $7.00 with foot pedal, cable and spring.

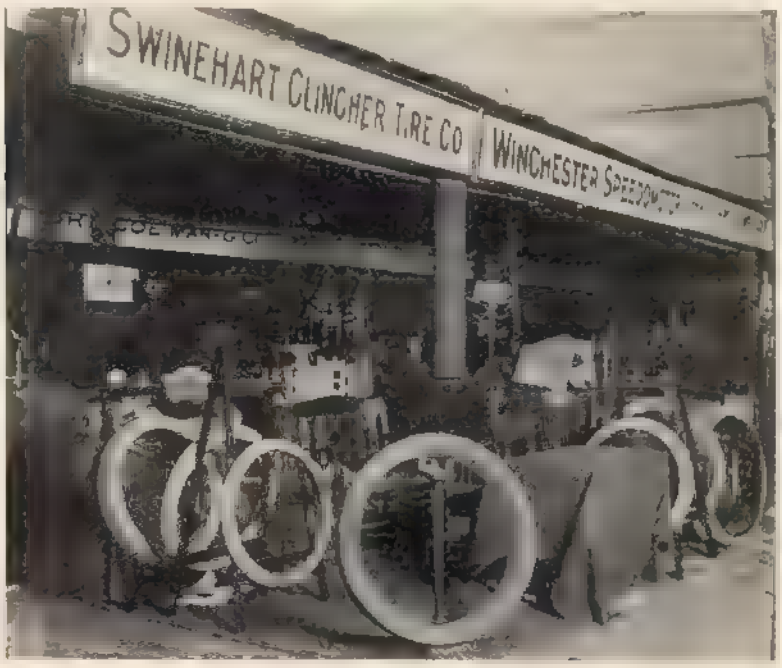
The 28-tube Gabriel horn is controlled by a key-board arranged the same as the key-board of a piano, and can be operated by any one who is familiar with the latter instrument. The price of this horn is $1000. This concern also makes an 8-tube horn listing at $200. These horns are manufactured only upon special order.

Schaler Type D Electric Vulcanizer

To meet the demand for an electric vulcanizer somewhat cheaper than its Type B, the C. A. Schaler Co., Waupun, Wis., has designed the Type D, here illustrated which is of the same general shape and design as Model B, with the exception of the heat control.

The "Schaler" Type D Electric Vulcanizer.

The heat in Type D is regulated by an automatic patented control, instead of by a rheostat. The outfit includes a chain clamp for outer casing repairs, binding bolts, unique veneered table for inner tube work, 25 cent can of cement and para rubber for several small repairs.



Grand Central Palace Show Exhibit of the Swinehart Clincher Tire Co., Akron, Ohio.

The 1908 Studebaker Models

The Studebaker Automobile Company, South Bend, Ind., present two gasoline models, besides a complete line of electrics, both pleasure and commercial, for 1908. The gasoline cars follow standard lines.

The policy of the Studebaker Company is not to bring out yearly models, but to make at any time such changes or improvements as are found necessary. In fact, the production of its different models is neither delayed nor precipitated by calendar dates. The policy of the company can perhaps be summed up as follows: "From the viewpoint of the engineer the gasoline automobile of the present day does not differ radically from a type that was accepted as standard almost three years ago. The problems that confront the manufacturers of to-day are of an educational nature. The day of exclusive features, which have been brought up by clever salesmen and thrown at prospective customers as 'talking points' is rapidly passing. The automobile of to-day does not depend upon sensationalism for its sale."

The motor used in the 1908 models is of the now standard four-cylinder vertical water-cooled type, the cylinders being cast in pairs with water jackets integral. The circulation is effected by a gear driven centrifugal pump. The 40 H. P. engine is 4¾x5¼, and the 30 H. P. engine is 4½x5¼, the bore being ⅜ of an inch larger than last year, altho the motor rating is still 30 H. P.

The ignition is by a Simms-Bosch low tension magneto, in connection with make and break spark on both cars. A nice point in connection with this system is the ease whereby the ignition can be retimed. The magneto is so arranged that it can be taken off without disturbing any other part of the mechanism.

The two chasses are very similar. The 40 H. P., seven-passenger, touring car is equipt with a selective type of transmission, running on annular ball bearings, while the lighter 30 H. P. car has the progressive type of transmission, which has proven so sucessful on this model that no change was found desirable.

The lubrication is by a mechanical oiler. The brakes on both models are un-

The 1908 30 H. P. Studebaker Touring Car. Motor 4 cylinders, 4½x5¼, water cooled, by centrifugal pump and tubular radiator. Ignition by Simms Bosch low tension magneto with make and break spark. The transmission is of the three speed forward and one reverse progressive type, but the large 40 H. P. models have four speeds, direct on the third, and are selectively operated. The entire under side is pan protected. The wheel base is 104 inches, wheels, 34 inches with 4 inch tires. The rear axle is floating and mounted on annular ball bearings. The front axle is of nickel steel. A complete outfit, consisting of headlights, generator, two oil side lights, rear light, horn, tires, carriers, gasoline gage, jack and complete outfit of tools. The cars are finished in carmine and black, with black leather, dark green with leather to match, or dark blue with blue leather. Other colors to the customer's specification.

usually large, altho here again a slight change of construction is noted. On the 30 H. P. chassis the foot brake operates on the drum of the transmission, while the side lever operates an emergency brake on the drums of the rear wheels. On the 40 H. P. chassis both sets of brakes are operated on the rear drums, being of the usual constricting and internal expanding type.

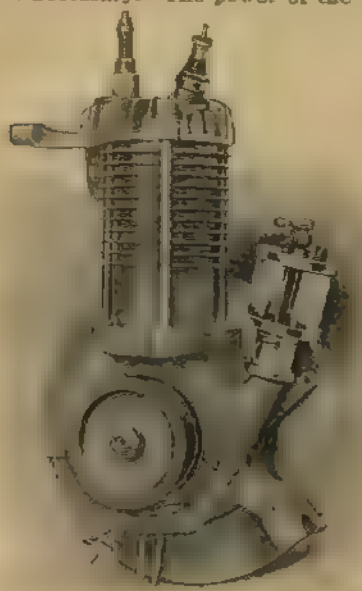
The front axles are of nickel steel, I beam section. The rear axles are of the floating type. The rear axle on the 40 H. P. car is reinforced by a pair of side jack rods in connection with a centre torsion rod.

A feature in connection with the 40 H. P. chassis is the direct drive on third speed, which is most suitable for regular touring over ordinary roads, while the fourth speed thru gears is desirable only for speeding.

The 1908 Yale-California Motorcycle; driven by a 2⅞x3¼ inch, 2¼ H. P. motor. Price $200, weight 120 lbs.

The 1908 Yale-California

This popular and efficient motorcycle, made by Consolidated Manufacturing Co., Toledo, Ohio, shows no radical changes for 1908, as only detail refinements were found necessary. The power of the motor



Motor used on the 1908 Yale-California Motorcycle

has been increased from 2 to 2¼ horse power by lengthening the piston stroke to 3¼ inches. The stroke was formerly 3 inches; the bore remains unchanged.

The spring fork used this season is heavier and stronger than the 1907 model, and is made by the Consolidated Manufacturing Company, and is the Sager type. It is fitting to remark here that every part of this machine is made in the Consolidated Company's factory, no parts being purchased outside. The 1908 fork is made of ⅞-inch, 10 gage tubing, with forged tips, and the bolts and bushings are all hardened.

The battery box has been transferred from under the saddle to the lower side of the rear fork between it and the seat mast, while the coil case is now placed in front of the seat mast instead of back of it. The battery box was moved to allow the use of a large coil spring saddle, which the former arrangement did not permit.

A peculiar feature of the Yale-California drive is the lagging of the engine pulley with hard cord to prevent belt slipping. The belt is made of two plies of specially tanned, water-proof leather.

In the advertisement of The Consolidated Manufacturing Co., Toledo, O., on page 293, November Journal, the 1908 model of the Yale-California motorcycle was mentioned, while the cut price and text referred to the 1907 model.

The weight of the 1908 machine has been slightly increased, being now 120 pounds, and the price is advanced from $185 to $200.

An adjourned meeting of the Cycle Manufacturers' Association will be held at Chicago, Wednesday, December 4, the meeting of November 7 not having a quorum present.

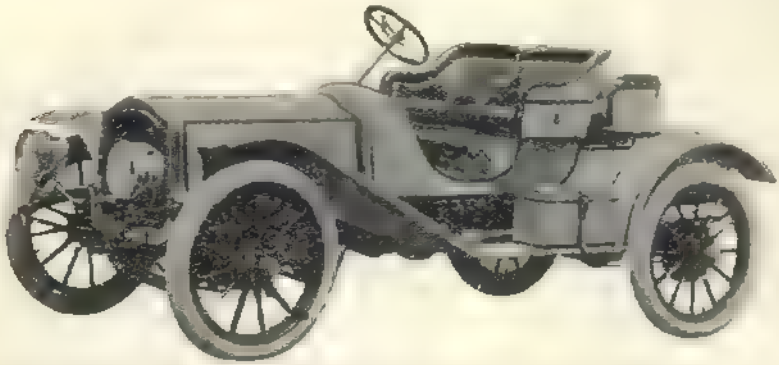
The Merkel Motor Company, Milwaukee, Wis., has discontinued the manufacture of automobile engines, and will hereafter devote the entire resources of the factory to the production of motorcycles.

The "Aerocar" Model E Runabout

The latest model offered by the Aerocar Co., Detroit, Mich., is their Model E runabout, which is of the touring runabout type and has that clean-cut, racy appearance that appeals to those who desire a car of this class.

Briefly, the chassis has a wheel base of 105 inches with 34x3½ inch wheels. The motor is 20 H. P. four-cylinder, air cooled. The new Aerocar multiple disc clutch is used. The transmission is of the sliding gear type with three speeds forward and reverse. A shaft drive with bevel gear floating differential in the rear axle is used.

This multiple disc clutch is a feature that is entirely new. It has 34 light, thin discs, alternating steel and bronze. The discs run in an oil bath and allow of the taking up of



The "Aerocar" Model E Runabout, wheel base 105 inches, wheels 34x3½ inch. 20 H. P. motor, four-cylinder air-cooled, multiple disc clutch; sliding gear transmission.

the power gradually. The car can easily be started on the high gear if so desired. This makes the clutch ideal with the sliding gear transmission, as the drive is direct on the high gear.

The batteries are carried in a box strapt on the running board on the right side of the car. The connection between them and the coil is short so that it is easy to locate any possible ignition troubles. On the left running board a similar box is strapt and is used as a tool box. They are both covered with rubber and bound with brass, thus making a convenient step for entering the back of the car.

The machine is finisht in a French gray with black molding, while the gear is Italian red. The upholstering is of red leather giving it a very snappy appearance.

Miller Model H Touring Car

Miller Motor Co., Bridgeport, Conn., include in their 1907 line, in addition to the commercial cars described in our May number, page 298, a touring car, Model H. It is of the surrey type and holds four passengers.

The motor develops 24-30-horse power, and is of the same general description, except in point of size, as the motor used for Models B and C. A honeycomb radiator is used, and a multiple-disk clutch of the same type as in the other cars. Ignition current is supplied by storage battery and dry battery, and the Connecticut spark coil is used.

The propeller shaft is 1⅝ inches in diameter, and has two universal joints.

The frame is of nickel steel, prest into the usual channel section, and straight in front, without camber. The power plant is mounted on a prest steel subframe.

The front axle is tubular, with a 4-inch drop at the center, and the drop-forged steering yokes are pinned and brazed, while the spring pads are attached. The rear axle is similar, except that rocking spring pads are used. The springs are half elliptic, 42 inches long and 1¾ inches wide, all around. The front springs have five and the rear springs have six leaves. Also, the front springs are under the frame sills and the rear springs are set out close to the wheels.

The wheels are Schwarz, 12 spokes, running on ⅝-inch standard roller bearings. Tires 36x3½ inches, front and rear. The steering gear is similar to that of the other cars. The gasoline tank carries 15 gallons. The wheelbase is 115 inches and the tread 56½ inches. Back of the rear seat is 15 inches of carrying space for trunk or luggage. The dash is straight, of mahogany, and the bonnet is of four aluminum leaves, hinged together in the usual manner.

R. M. Owen & Co., Lansing, Mich., general sales agents for Reo cars, advise us that 1209 Reo cars were shipped during March and April.

The Tacoma Automobile Club, of Tacoma, Wash., are active in the cause for good roads, having appointed a committee to raise $5000 to aid in the paving of Centre street, that city.

Mr. Clark, of the Deere-Clark Motor Car Company, of Moline, Ill., has appointed Mr. John E. Miller as superintendent of the company.

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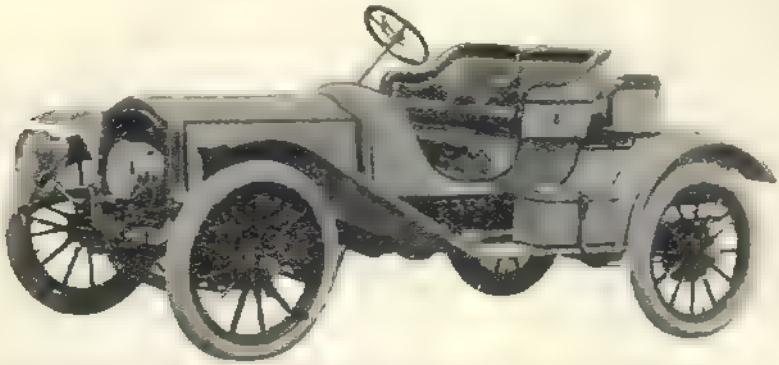

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The motor develops 24-30-horse power, and is of the same general description, except in point of size, as the motor used for Models B and C. A honeycomb radiator is used, and a multiple-disk clutch of the same type as in the other cars. Ignition current is supplied by storage battery and dry battery, and the Connecticut spark coil is used.

The propeller shaft is 1⅝ inches in diameter, and has two universal joints.

The frame is of nickel steel, prest into the usual channel section, and straight in front, without camber. The power plant is mounted on a prest steel subframe.

The front axle is tubular, with a 4-inch drop at the center, and the drop-forged steering yokes are pinned and brazed, while the spring pads are attached. The rear axle is similar, except that rocking spring pads are used. The springs are half elliptic, 42 inches long and 1¾ inches wide, all around. The front springs have five and the rear springs have six leaves. Also, the front springs are under the frame sills and the rear springs are set out close to the wheels.

The wheels are Schwarz, 12 spokes, running on ⅝-inch standard roller bearings. Tires 36x3½ inches, front and rear. The steering gear is similar to that of the other cars. The gasoline tank carries 15 gallons. The wheelbase is 115 inches and the tread 56½ inches. Back of the rear seat is 15 inches of carrying space for trunk or luggage. The dash is straight, of mahogany, and the bonnet is of four aluminum leaves, hinged together in the usual manner.

R. M. Owen & Co., Lansing, Mich., general sales agents for Reo cars, advise us that 1209 Reo cars were shipped during March and April.

The Tacoma Automobile Club, of Tacoma, Wash., are active in the cause for good roads, having appointed a committee to raise $5000 to aid in the paving of Centre street, that city.

Mr. Clark, of the Deere-Clark Motor Car Company, of Moline, Ill., has appointed Mr. John E. Miller as superintendent of the company.

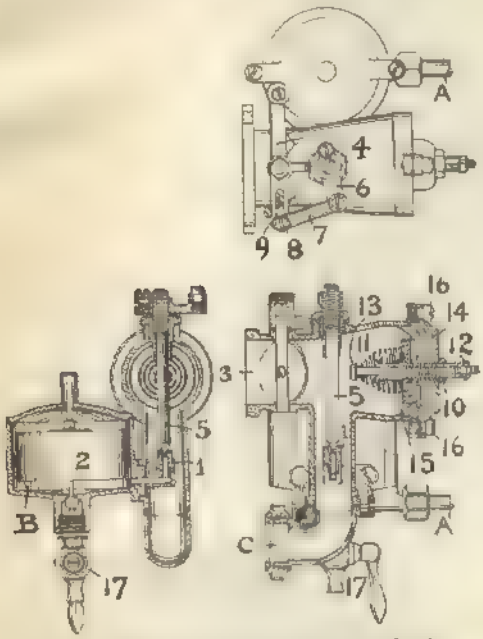
The "American" Carburetor

The American Carburetor Company, 907-909 Michigan avenue, Detroit, Mich., has recently placed on the market the "American" carburetor, which is of the float feed type.

Gasoline enters thru pipe A, and passes thru a valve into float chamber B. The gasoline level in nozzle 1 is maintained by float 2, which can be adjusted in thirty seconds of an inch, to any desired position. The adjustment of this float displays a very simple and accessible mechanical feature.

Air enters thru elbow C, and passes nozzle 1, with a velocity sufficient to carry with it the necessary amount of gasoline into mixing chamber, 3, from which it is taken into the cylinder of the engine.

It has been found essential in float feed carburetors, that to maintain high speed,



The "American" Carburetor: End and longitudinal sections and plan view. A, Gasoline pipe; B, float chamber; C, elbow; 1, nozzle; 2, float; 3, mixing chamber; 4, lever; 5, needle; 6, needle lever; 7, connecting link; 8, adjusting screw; 9, slot; 10, air valve adjusting screw nut; 11, auxiliary air valve spring; 12, air spring adjusting screw; 13, bridge; 14, air valve; 16, auxiliary air valve bridge screws; 17, drain cock.

a greater amount of gasoline is necessary, than is used at low speeds. The velocity thru strangling tube not being great enough to lift the proper amount of gasoline, a lever 4, is provided, which is secured to needle 5, by means of lever 6, and connecting link 7.

The lever, 4, is pivoted, and is also in linked connection with the throttle, so that when the latter is opened the needle 5 will be raised thereby admitting the extra amount of gasoline needed for high speed. This amount of gasoline, governed by adjusting the screw, 8, in slot, 9. This adjustment is only used for testing the carburetor, and after proper amount of gasoline is secured, the adjustment is omitted and connection made permanent.

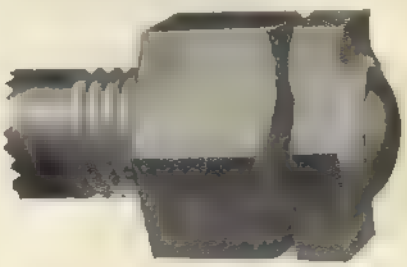
The auxiliary air valve can be adjusted as to its lifting capacity by loosening air valve adjusting screw nut, 10, and turning adjusting screw in any desired direction. The tension of auxiliary air valve spring, 11, can be adjusted by unscrewing nut, 12, turning spring adjusting screw, 13, and locking the same by afore mentioned nut, 12.

The bridge, 14, holds air valve, 15, in position. By removing two auxiliary air valve bridge screws, 16, entire auxiliary air valve can be removed. The float chamber, B, is provided with a drain cock, 17, so that it can be easily emptied. The elbow, C, can be disconnected, and any other desired form can be substituted.

The "Grip" Nut

A lock nut which will hold in any desired position on a bolt, and will allow it to be tightened any portion of a turn without danger of coming off, is being manufactured by the Grip Lock Nut Co., 148-152 Lake street, Chicago, Ill., and is called the "Grip" nut.

The "Grip" nut is very simple in its construction, being a one-piece steel nut which is made from bars of suitable length, rolled with an arch or bow along its center. After the nut is punched and cut off it is tapped in the usual manner and it is then that the operation is made which gives it the friction lock on the bolt thread that is so simple and yet effective. It consists merely of running the nuts thru a deflecting press



The "Grip" Nut.

which depresses the threads in the arch at each end. This straightens the arch threads as compared with the true spiral of the original thread, or rather gives them a slight down curve which when applied on a bolt grips the threads in a friction lock which no strain or vibration can loosen, locking it on the bolt regardless of contact with the main or holding nut. They can readily be removed by a wrench and used many times.

These nuts are made in all sizes, from ⅜-in. to 1¼ in. U. S. Standard thread, and can also be made with special threads and in special sizes.

M. M. Special for 1908

THE REAL M. M. FOR 1908

is truly the greatest Motor Cycle value in the World. Think of a [illegible] H. P. Motor Cycle, equipped with 26" wheels, nickeled rims, fitted with 2" G. & J. tire tires, newly designed cylinder and cylinder head doing away with any chance of engine overheating or causing ring trouble; special frame dropped 2" at seat post to rear, thus bringing the top of saddle in a direct line with top of frame, slightly more rakish at front or head, thus bringing handle bar back a little nearer the seat, at the same time giving machine a longer wheel base, which is a decided advantage in Motor Cycle construction.

ALSO EQUIPPED WITH THE PATENT M. M. TRIPLE PLATE SPRING FORKS, [illegible] leaf springs worked out to the highest point of efficiency with brand new ideas in the application to Motor Cycle building, used exclusively and only on the M. M. for 1908.

A new chain idler device, which together with the long rear adjusting jaws admit of a longer wheel adjustment, thereby taking up any and all slack that might appear in belt, doing away with belt idler and adding efficiency to the belt transmission; the belt detachable through rear stay by simply removing one bolt.

Attached to rear frame is a patent Motor Stand, ready to hold your machine at a moment's notice. On [illegible] will be found priming cups in direct contact with capped pet cock on cylinder head, allowing of the priming of cylinder when machine is hard to start, by simply pressing a button.

Don't you think such a machine would sell in your section?

AGENTS, WRITE FOR VERY INTERESTING PROPOSITION FOR 1908

American Motor Company

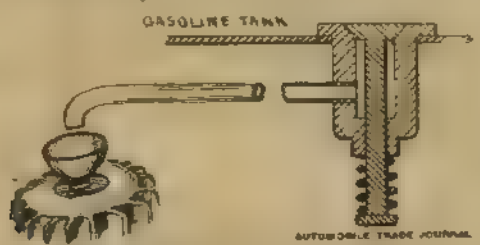
715 Center St. **BROCKTON, MASS.**

1908 M. M. Motorcycles

The American Motor Co., Brockton, Mass., maker of the M. M. motorcycles, includes in its 1908 line the M. M. regular single cylinder, 2¼ H. P., model, listing at $175; a special 2¼ H. P., light weight model, listing at $200; a double cylinder, 6 H. P. model, listing at $250, and a 2¼ H. P., 100 pound model, listing at $140.

The 1908 M. M. Motorcycle Roadster Type, truss fork, triple spring suspension; 28 inch wheels, steel rims, [illegible] inch front, or [illegible] & 3 2¼-inch tires, double grip control, speed [illegible] miles per hour, wheel base 51 in., weight, ready for the road, 150 lbs.; price $175 [illegible] equipped with tandem attachment at $20 extra. A similar, lighter, model called the M. M. 51 [illegible] at $200. It has 26-inch wheels and weighs 135 lbs.

The $175 machine is a roadster of the same general lines as the 1907 machine. The "M. M. Special," 2¼ H. P. model, has a very low saddle position, and 26-inch wheels with nickel plated rims. It weighs but 135 pounds. It is equipt with an "automatic" repair stand, tool box, spring handle bar, detachable rear guard and improved battery box fastening.

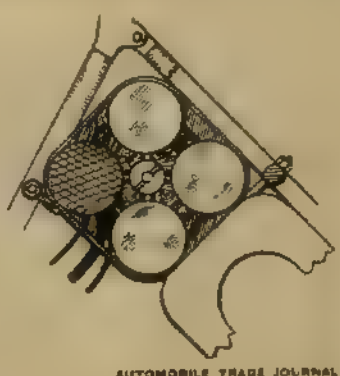


Cylinder Primer of the M. M. Motorcycle.

The most important improvement on the 1908 "M. M." is the new spring fork. A flat 3-leaf spring replaces the extension of the front mud guard. One end of this leaf spring is held by three bolts under the fork crown, and it is therefore free to act in either direction so that no recoil arrangement is needed. The forward end of the leaf spring is hinged to a staple-shaped standard which straddles the front wheel and has its two lower ends attached to the front axle. A link connects the front hub and the lower end of the fork.

Another new feature of the 1908 M. M. is a motor priming device. A cupt pet cock is fitted to the cylinder and a pipe leads from the fuel tank to a point directly over the pet cock cup. By pressing a button near the fuel tank a valve is lifted off its seat and allows gasoline to travel thru the pipe to the pet cock. A spring returns the valve to its seat as soon as pressure is removed from the button.

The new battery box is another clever feature. The box is swung between the rear fork and the seat mast, and the cells are placed transversely, regulation No. 6 dry cells being used. Wooden triangular strips, each with one apex between two cells, are placed in the middle of the group of cells and coil, and an expander is provided which tightens up these wood strips, thus locking the cells in place and holding them firmly.



Battery box and batteries used on the M. M. Motorcycle.

One of the small things that adds much to the satisfaction of the user is a fastener for the gasoline tank cap. This consists of a chain fastened to the cap at one end and to a cross pin in filler opening. This device prevents cap from getting lost or dropt in the dust while the tank is being filled.

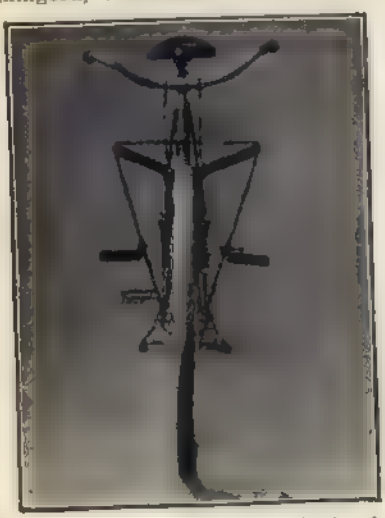
The necessity for a belt idler is elimi-

"Bradford's" Child and Luggage Carrier

The cuts herewith show a combination child and luggage carrier for use on bi-

"Bradford's" Child or Luggage Carrier side view.

cycles or motor cycles. It is manufactured by the Bradford Co., 711 Market street, Wilmington, Delaware. It is made ad-



"Bradford's" Child or Luggage Carrier, front view.

justable for 26 or 28-inch wheels, and is also adjustable as to size, that is, for a long or short carrier

Foreign Four-Cylinder Motor Cycles

Worcester, Mass., Nov. 22, 1906

There are now two four-cylinder machines marketed regularly in Europe, so many "twins" that I think even the papers have lost track of them, and singles till one can't rest. In addition the tri-car and fore car as well as that makeshift for sociability, the side car.

Of the four cylinder machines the F. N. (Fabrique-National), made by the Fabrique National de Armes de Gurre, at Herstal, Leige, Belgium, is the best known. The other, the Durkopp, is less known, altho probably a little faster machine. Both have some points in common. Four vertical cylinders, arranged tandem, shaft drive thru bevel gears, magneto ignition, (the F. N. using Simms-Bosch, and the Durkopp having the magneto arranged in the fly-wheel ahead of the engine), both have two sets of available and fully efficient brakes, on drums or wheel rims. (Please note the internal hub brake is not used on motors in Europe, probably because it is low in efficiency and a poor thing to depend on absolutely). Both use lug fastened tire construction with full clinchers, and they also use a "butt ended" tube which can be replaced without taking wheel out of forks.

Both use forks forward witrh springs that actually do something, and both use float feed carburetors. Either wheel is made for long, hard touring, and will deliver the goods.

The chain drive is not used except in a few isolated cases and the V belt has 95 per cent. of the trade in one form or another. Belt idlers are not used.

To return to the F. N. I have ridden this wheel now for fully 2500 miles. The ignition has never faltered, the tires still have their first charge of air in them and the outer shoes are hardly worn smooth. (Continental lug fastened clinchers). I have never found a hill the machine would not climb, in my regular riding, altho I will admit I have not gone hill hunting because I am too heavy. The machine will run on the spark or spark and throttle so there is no possibility of violating even an 8-mile ordinance, and it is geared to 30 miles at 2000 turns. It will go faster on a pinch, but that speed is far above what one would use for comfort in touring

The machine has run the whole season practically untouched, valves and springs sent as spares still lie in the tool case, lubrication is perfect, brakes have not needed adjustment, and the spring fork on front wheel is in perfect shape. I have ridden as far as 62 miles without stop and something over 30 without touching the throttle. Carburetion seems automatic, and fully satisfactory. Cylinders heat evenly and the air cooling cools all four

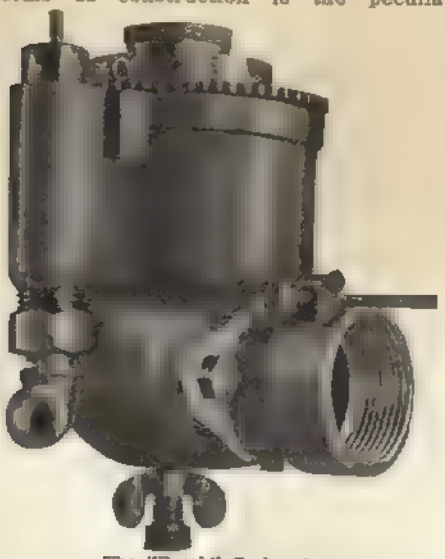
Hub and rim brakes give a sense of security that I never had with a coaster brake, (this hub rear brake is on a nine-inch drum and fully protected), and best of all the weight is so low that skids are as rare as on a trolley car.

This wheel sells for 50 guineas ($250) in England, and I understand a little less on the Continent Engine is rated at 3½-H P., and I think it is closer to 4. Fuel consumption is very moderate.

Everything considered, and for value re-

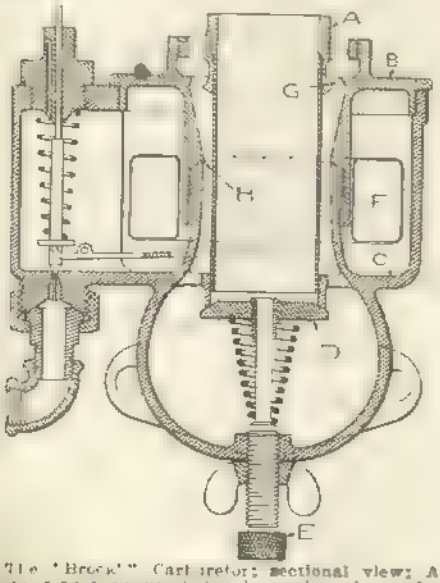
The "Brock" Carburetor

In the Brock carburetor herewith shown, the most noticeable departure from general forms of construction is the peculiar



The "Brock" Carburetor.

method in which gasoline is fed by means of an annular valve to the mixing chamber. This carburetor is the product of A. C. Brock Co., 86 La Salle street, Room 10, Chicago.



The "Brock" Carburetor; sectional view; A, supply pipe from which the incoming air reaches compensating air valve; also acts as an adjustable choker for the initial air opening at G. B, cover for float chamber, also acts as an adjustable annular gasoline valve in connection with C, C, float chamber, mixing chamber and annular gasoline valve; D, compensating air valve. E, compensating air valve adjustment; F, annular float. G, initial air inlet; H, annular gasoline valve.

A thin vapor of rarified gasoline, supplied by the annular valve, completely surrounds a thin sheet or hollow column of incoming air, making a uniform, rich mixture. As the throttle is opened a separate column of air is drawn thru the center of the hollow annular column of mixture and spread out in a sheet at the point of intersection by the compensating air valve. By refering to the sectional cut, the method by which the gasoline issues from the annular valve (H), and is vaporized by the thin column of air rushing by it, will be readily understood. The annular valve (H) is threaded into the float chamber (C), and is adjusted by turning the cover (B). The float (F) is adjusted so that the gasoline stands about 1-16-inch below the top of the gasoline valve. The carburetor is made in ½ inch up to 3-inch sizes, and lists at $16.00 to $75.00.

Improvement on the 1908 "Yankee" Muffler

The "Yankee" Silent Air-Cooled Muffler, which was described in our December, 1906, issue, page 272, is being brought out for 1908, by its manufacturers, D. B. Smith & Co., of Utica, N. Y., with a new improvement which they claim will eliminate all smoke

The "Yankee" Silent Air-Cooled Muffler fitted with Fan-Tail Exhaust

This new feature consists of a fan-tail exhaust, placed at the outlet of the muffler which distributes the burnt gases in a thin sheet, thereby preventing clouds of smoke from arising from behind the car

"Leak-No"

Leak No is manufactured by Headson & Overesch, of Lafayette, Ind., and is sold exclusively by H. W. Johns-Manville Co., 100 William street, New York City. It is a metallic compound which is guaranteed to stop any ordinary leak against any pressure of oil, steam, gas, air, ammonia or water. It comes in the form of powder, and is used by mixing it with water to a stiff putty. When in this state, it is a chemical plastic material that will metallize in a few hours. During its metallizing process, it expands so that it perfectly fills the leak, and as it expands with heat equally with iron and steel, it makes a permanent repair. It is claimed to stand any heat that iron will stand, and to expand and contract equally with that metal. It is put up in 1, 5, 25 and 50 pound cans, listing at $1.00, 90 cents, 85 cents and 75 cents per pound, respectively.

The Warner Instrument Company has established a branch at Cleveland, O., with O. T. Foster, as manager, who was transferred from the Detroit house.

The Cadillac 1908 Cars

HUGH DOLNAR.

The Cadillac Company, of Detroit, Mich., announce their 1908 models as practically identical with those of 1907. They are as follows: Model "G," five-passenger, four-cylinder, price $2000, or as a limousine, price $3000; Model "G," seating capacity three, same chassis and price as the touring car Model "G " 30 H. P., four cylinder, Model "H," five-passenger, touring car $2500, or as a limousine $3600; Model "S," runabout, $850, or as a touring car $1000 and a light delivery wagon the same chassis, Model M, 600 pounds load, $1000

The Cadillac 1908 Model "G " four cylinders, nominal 20 H. P., five-passenger tonneau body, will be continued with only detail betterments as the 1908 Model "G." In accordance with the latest formula approved by the A. L. A. M., the rating of this Model "G" motor is raised to 25 H. P., altho the motor cylinders number, bore and stroke, remain unchanged. The Cadillac four-cylinder cars are listed at substantially 1907 prices for 1908

The well known Cadillac single cylinder motors will be continued without material mechanical change. The single cylinder chassis, however, which was 76 inches wheel base in 1907 is changed to 82 inches for 1908, and the prices of both the tonneau body and the two-passenger runabout are increased from $950 to $1000 and from $800 to $850 respectively.

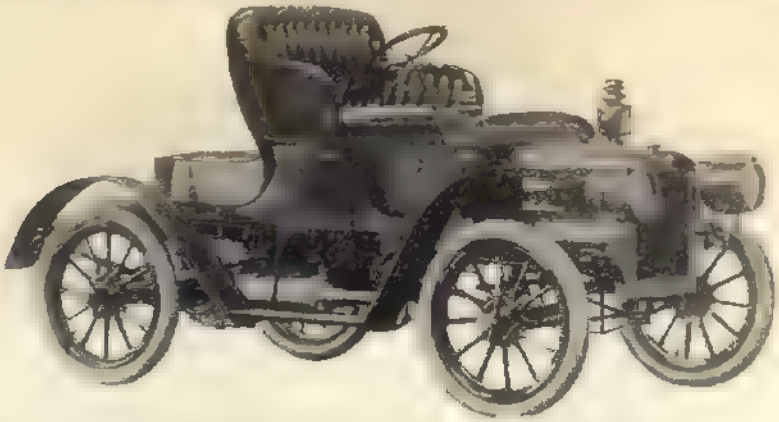


Fig. 1. The 1908 Model S Single Cylinder Runabout shows the new style of body. The mechanism remains practically as in 1907, but the price has been raised to $850.

In 1907 the Cadillac added a new low priced coupe, Model "M," single cylinder chassis, which was received with much favor This coupe will be carried over to 1908 as Model "T," the only change being an increase of 6 inches in the wheel base, making it 82 inches. The price of the Model "T" coupe remains the same as in 1907, $1350.

The Cadillac Company offered delivery cars, 600 pounds paying load, single cylinder chassis, in 1903, and while no special efforts have been made to push this commercial Cadillac, its sales have steadily increased, and this Model "M" delivery car will be continued for 1908, with no change in either its design or construction, 76 inches wheel base as before

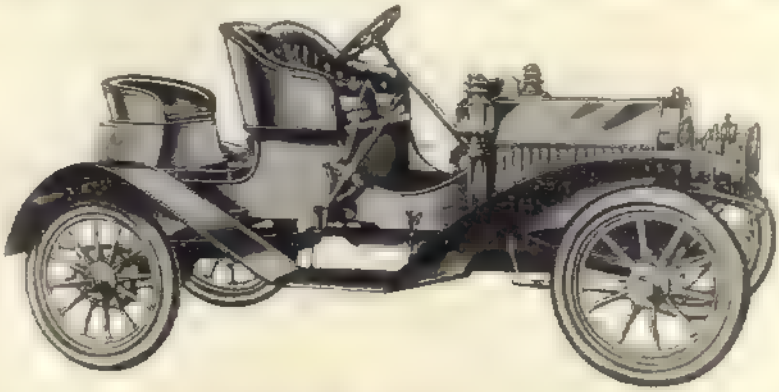


Fig. 2. The 1908 Three-Passenger Cadillac Runabout This car has the Model G Chassis, but the body is a 1908 design. Price, $2000

The Continental Car

One of the new cars to be exhibited at Grand Central Palace Show is the "Continental Car," manufactured by the Continental Automobile Manufacturing Company, New Haven, Conn. The various models for 1908 have for the past six months been on the road, being tested, and demonstrating cars to the company's various agents are now being delivered.

Fig. 1. Continental Touring Car, six cylinder 1908 model showing the well proportional hood and equipment, straight line body effect, location of the gasoline tank in the rear, and the extra large brake drums on the rear wheels.

The details of the running gear for the various models show great care in working out. Especially is this true in the steering gear, in which all the parts are so interlocked that it is necessary to start at one end to take down the steering rods, connecting arms, and other parts. Every nut is fitted with split pin or locking device. A special ball socket joint, patented by the company, is used on both ends of the steering rods. The box enclosing the rack and worm gear is bolted directly to the side of the frame and prest against the sub-frame, and there is an additional bearing for the steering column on the dash. The tie rod connecting the wheels is placed back of the front axle, giving it protection, so that any obstruction in the road would not disarrange the steering gear. Ignition and throttle controlling levers are placed on the steering wheel, but do not revolve with the wheel. A foot accelerator is provided, as well as a cut-out. Front springs are semi-elliptic with bushed eyeholes, and fitted with compression grease cups. The mahogany dash is a carefully rounded design, and carries the air pump for the gasoline tank.

The standard four-cylinder touring car known as Model C, has a wheel base of 120 inches, and is equipt with 34 by 4 inch tires, six-passenger straight line body, and lists for $3000. Model B is the same car with the motor somewhat farther back, equipt with semi-racing body for three passengers, and is the standard roadster for 1908, and lists for $2700. Model D, 50 H. P., four-cylinder; and Model E, 40 H. P., six-cylinder, have

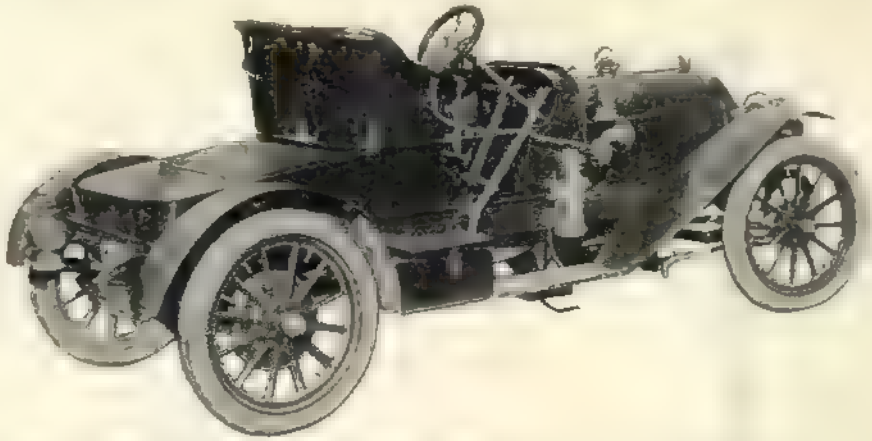
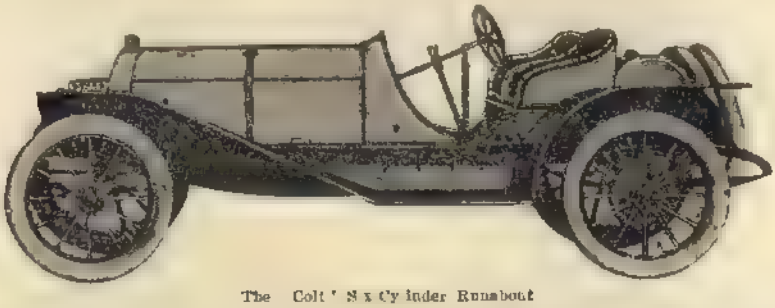


Fig. 2. Model B 1908 Continental Car with chauffeur's seat closed under deck, 30 H. P. foreign rating, 112 inch wheel base, geared for a maximum of 65 miles, price $2700

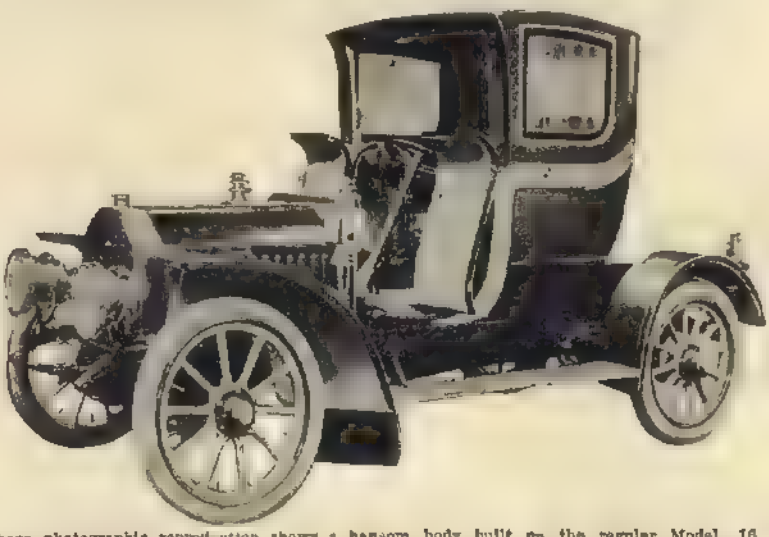
The "Colt" Six-Cylinder Runabout

The Colt Runabout Co., Yonkers, N. Y., are offering to the trade the Colt six-cylinder runabout, a car built on sound mechanical and up-to-date lines, and selling at a price to the public which pays a fair percentage of profit to the company. The six-cylinder motor in the Colt runabout is designed especially for them by the Howard Motor Works, whose chief mechanical man is W. S. Howard, formerly head of the motor department of the Gas Engine and Power Company, and Chas. L. Seabury Company consolidated. It is built on very fast lines with ample clearance and low centre of gravity. The body has no Rumble seat, the short rear end being utilized for carrying a 20-gallon gasoline tank, tools, extra parts and tires. A detachable mechanician seat is located on the left hand running board. Wheel base is 105 inches. Tire dimensions are 34 by 4 inches all around, making it only necessary to carry one size and shift the worn rear tires to the front wheels. Brakes are of the band and internal expansion types, metal to metal. The cone clutch connects the motor with a three-speed sliding selective transmission, which is geared direct on high speed, at a ratio of 2½ to 1 or 2 to 1 if so desired. A propeller shaft is used to the bevel gear drive on the rear axle. The axles are very large, and of the floating type. The cylinders in the motor, six in number, are water-cooled and are cast separately. Bore 4½ in. and stroke 5 in., rated at 40-horse-power. Jump spark ignition is supplied from storage and dry batteries. The weight of the car with tanks empty is 1800 pounds. Price f. o. b. Yonkers or New York City $1500. The car is guaranteed for six months. The output of six cylinders for this season will be 100 cars.



The Colt Six Cylinder Runabout

Hiram Percy Maxim, for many years chief engineer of the Electric Vehicle Co., of Hartford, Conn., resigned August 1, 1907, to follow out some new developments which cannot be made known at this time. He states that the greatest regret he has in resigning is the necessity of giving up the associations formed in the Mechanical Branch of the A. L. A. M., and the engineering benefits resulting from membership in that organization.

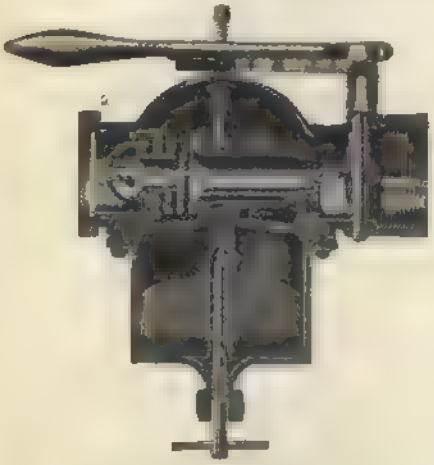


The above photographic reproduction shows a handsome body built on the regular Model 16 roadster chassis manufactured by the Peerless Motor Car Co., Cleveland Ohio. The power is furnished by a 4-cylinder motor 4¾ inch by 5 inch stroke; transmission, 4 forward speeds and one reverse, wheel base, 100 inches internal expanding, leather faced clutch; spur gear differential; wheels, 34x4 front, and 34x4½ inches rear.

The "Old Nick" Carburetor

The "Old Nick" is the product of the Pioneer Brass Works, 424 South Pennsylvania street, Indianapolis, Ind., who claim it to be equally adapted for use with either gasoline or alcohol, or even coal oil.

It is of the float feed type, and can be placed in all positions except upside down Vaporization is effected by means of a double volume of air, one coming thru the center of a circle and the other over the outside, meeting at the point of the spray nozzle,



The "Old Nick" Carburetor: Sectional View

where the vaporization takes place. The carburetor is made in ½, ¾, 1, 1¼, 1½ and 2-inch sizes, for 1 to 6 cylinders, and lists at $9, $10, $12, $15, $20 and $25 respectively

They also make a special carburetor, finished inside and out and made vertical, and known as the "Old Knick" Special. It is made in 1, 1¼ and 1½-inch sizes and lists at $15, $20 and $25, respectively.

"Dentzeau's" Automobile License Pads.

George Dentzeau, 896 8th avenue, New York city, is offering to the autoist the 'Dentzeau" all leather license pad, which is claimed to be indestructible

Dentzeau's N. Y. and N. J. Double Pad

The pads are made of the best quality of patent leather and the best quality of silk thread. The figures are cut by hand from the same leather as the pad and are sewed on with oiled silk thread. The pads are lined with rolled steel.

Dentzeau's N. Y. State Single License Pad

His single pad lists at $2.00, and the double pad at $4.00. Red Cross pads are listed at $2.00, and spring straps at $3.50 per pair.

The "American" Auto Horn

The accompanying cut shows the latest model of the "American" Auto Horn placed on the market by the International Auto Horn Mfg. Co., 151 East 126th street, New York City. This horn was designed by Mr. S Salvini, the president of the concern, and is the outcome of his long experience in the horn business as well as familiarity with for-

The "American" Auto Horn.

eign makes of horns. The International company's plant is equipt with all the latest improvements in the line of tools, machinery and appliances. Their No. 32 horn lists at $4.00 and is fitted with a fine French bulb, reed, fifty-inch flexible air-tight tube and a screen. They guarantee every horn

The "Champion" Automobile Jack

Patterson, Gottfried & Hunter, Ltd., 146-150 Center street, New York city, have brought out a new style of Champion jack, which is illustrated herewith.

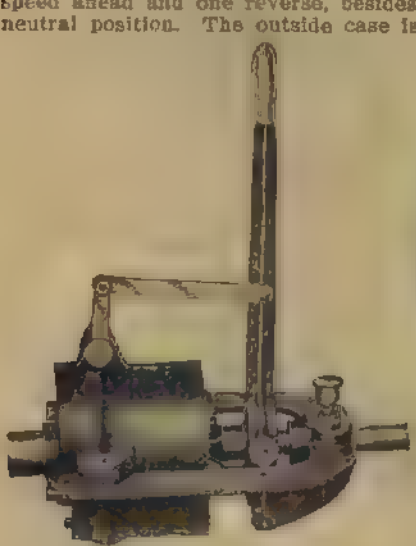
The fundamental principle of this jack is in the turn buckle, the right hand thread running thru one end and the left hand thread thru the other, so that when turning the cross bar with the base and top of jack remaining stationary it gives a double lifting motion to the jack. They claim that this is the first time this principle has been applied to a jack for automobiles and that

the splash system. The cylinders are lubricated by oil cups, which are so located that the oil is fed direct into the passages leading from the changing cylinders to the explosion chambers, and is carried there by and with each fresh charge of the explosive mixture in the form of a fine spray, and is deposited on the internal surface of each cylinder while the piston is at its lowest position. As the piston raises it becomes thoroly lubricated by the fresh oil, which also acts as a packing for the piston and rings.

Ignition is by the jump spark system. The timer is driven by a pair of spur gears located inside of the crank case. The water is kept in circulation by a bronze plunger pump also driven by spur gears located in the crank case.

Michigan Reverse Gear

Michigan Wheel Co., of Grand Rapids, Mich., has lately added to its line of marine goods a reverse gear, giving one speed ahead and one reverse, besides the neutral position. The outside case is oil-



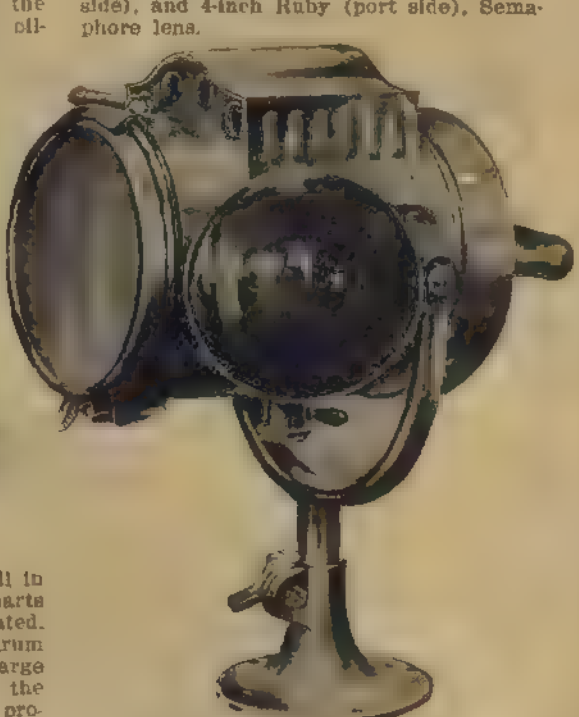
The Michigan Reverse Gear

tight, and is to be filled with thick oil in which the gears and all working parts operate, and are thus thoroly lubricated. The brake band on the outside of the drum is very wide and strong, and has a large brake area for the purpose of holding the drum stationary when reversing the propeller shaft. The clutch band on the inside of the drum is an expanding ring which on the forward drive securely locks the entire reverse mechanism as a solid shaft rotating with the engine shaft. A set screw is provided for adjustment to compensate for wear. Seven sizes of these gears are furnished, ranging in price from $18 to $120, adaptable for use on engines of from 1-3 to 12 H. P. per 100 revolutions per minute. Weights range from 30 to 200 pounds.

The interior mechanism of this gear is quite simple, consisting of six steel spur gears always in mesh. The gears all have bronze bushings and hardened steel pins and oil holes for thoro lubrication. Gears are only in operation on the reverse motion, and at that time rotate the propeller shaft at about ¾ the speed of the forward drive. The clutch ring is expanded by a dog operated by a lever, and every square inch in the clutch or brake area is utilized as the ring expands the full circumference of the drum. The dog that expands the clutch is covered by the drum.

The Dietz "Neptune" Boat Light

The R. E. Dietz Co., 60 Laight street, New York City, has brought out in addition to its well-known line of lamps for the 1908 season a new motorboat search light known as the "Neptune." It is especially designed for motorboat use and is operated by acetylene gas. It is equipt with a Bausch & Lomb Mirror lens, together with a 4-inch Green (starboard side), and 4-inch Ruby (port side), Semaphore lens.



The Dietz "Neptune" Boat Light.

The outfit includes a ½-foot Dietz acetylene burner, and a special bronze bracket with swivel stub and broad base. This lamp lists at $15.50.

As a result of the many successful experiments conducted during the past several months at life saving stations with motor propelled life boats, the government will equip each of its 260 stations with motorboats. From time to time the number will be increased at each station.

D. M. T. Co.'s Runabout

We show herewith two of the latest products of the D. M. Tuttle Co., Canastota, N. Y., builders of gasoline engines and launches.

Their "Little" runabout has a length of 16 feet 6 inches, with a 4-feet beam. It weighs 330 pounds with a 2-H. P. motor. The keel and timbers are of selected white oak. The white pine planking and decks are held in place with copper fastening. The transom, gunwale and engine bed are of selected oak. All hard wood is finisht with two coats of best spar varnish. The outside is painted with three coats of blue paint to water line and three coats of white below. Interior is painted white, with seats and floor of cherry red. The price complete with a 2-H. P. motor is $175 and with a two-cylinder 4-H. P. motor $235.

The D. M. T. Co.'s "Little" Runabout.

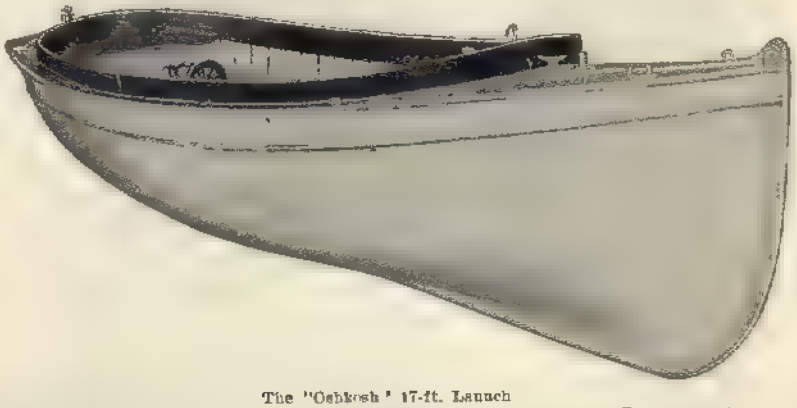
The "Gentlemen's" runabout is designed on the very best lines for speed and stability, developing a speed of fourteen to fifteen miles, without any sacrifice of seaworthiness. Its length over all is 22 feet, beam 4 feet. In construction the very best of material and workmanship are used. Its frames are of selected white oak; planking of white pine or Washington fir; copper and composition fastenings thruout; covering board and coaming and seats of oak, dark finisht; decks and transoms of selected mahogany. Two cross seats are provided, accommodating two persons each with single chair for operator. The engine is located in the bow forward of operator, with ratchet steering wheel and control lever immediately at hand, same as in an automobile. The price with two-cylinder 10-H. P. motor, with reversible propeller, is $750, and with Carlyle Johnson reverse clutch and solid propeller, $800.

The D. M. T. Co.'s "Gentlemen's" Runabout.

The "Oshkosh" 17-Foot Launch

The Oshkosh Boat Works, Oshkosh, Wis., well-known designers and builders of high-class launches and all types of sea craft, are offering for this season a 17-foot gasoline launch, which has a very light draft, allowing it to be used on almost any lake, at the same time presenting a handsome appearance.

The boat is 17 feet long and has a 4-foot 2-inch beam. It is planked with both cedar and cypress ⅛-inch thick. The ribs are of white oak 1¼x½-inch. The keel, stern, bow and stern post are of clear white oak. It has a seating capacity of nine people. It is fitted with a 1¼ H. P. motor, brass steering wheel, swedes iron tiller rope, brass fittings and develops a speed of from 7 to 8 miles an hour. The gasoline tank capacity is 10 gallons, and the boat draws but 11 inches of water.



The "Oshkosh" 17-ft. Launch

The Hagar Carburetor

Hagar Automatic Carburetor Company, 817-823 Broadway, Nashville, Tenn., have just placed on the market the Hagar Carburetor, here shown

In the Hagar Carburetor the float feed is employed, but an external adjustment is provided to permit of the gasoline being kept at proper height. Except for change due to wear, this adjustment once made should be invariable during the life of the carburetor The most radical departure from conventional lines is the discarding of the needle valve, for the adjustment of the gasoline supply, and the substitution for it of a form of vac

Exterior View Hagar Carburetor.

uum control which is said to be very effective in supplying fuel in proportion to the demand for it. This is accomplished by means of a single adjusting screw, and by means of it, even the novice in the operation of motor cars can adjust his carburetor so as to give a uniform and invariable mixture thruout the entire range of operation of the motor

The Hagar Carburetor, aside from its float control of gasoline supply, has no valves, no springs, and no vibrating parts requiring adjustment or subject to wear. It has no small orifices to stop up with sediment, and is entirely accessible for examination without the change of any adjustment.

We show herewith exterior and sectional views of the angle or side outlet type of this carburetor The gasoline enters thru the inlet (G) with union attachment, and passes to the float chamber thru the screen (H) where any sediment that might interfere with the operation of the float valve is deposited. This screen is readily removed for cleaning by disconnecting the union, and is of large capacity and not readily filled up. The float valve (R) is controlled with a powerful leverage by the float (F), the fulcrum of which can be raised or lowered by means of the micrometer float adjusting screw (T), and the gasoline level brought to the desired height, at the nozzle (N). This screw also carries a flush pin (S) by means of which the float may be lowered and the carburetor flushed for starting

Connection to the motor cylinders is made by a flange on the side outlet (E), and air is drawn in thru the bottom inlet (A), passing up and thru the throat (B) at relatively high velocity, and in so doing producing an inductive effect thru a number of small openings (C), radiating from the gasoline nozzle (N). This inductive effect causes a partial vacuum in the chamber (I), which draws up gasoline thru the nozzle (N), and sprays it thru the openings (C), where it is thoroly evaporated by the passing air current. The quantity of gasoline discharged can be regulated, by means of the regulating screw (J). When this screw is tight down on its seat, the effect of the vacuum formed in the chamber (J), is at maximum and a discharge of gasoline greater than required, can be obtained. If this screw be backed off from its seat, however, air passes in thru the opening so made in the top of the chamber (I), the vacuum is partially destroyed, and a less amount of gasoline drawn in. When once the regulating screw (J), is properly set, the quantity of gasoline discharged remains practically proportional to the rate of air flowing thru the throat (B), and results in an explosive mixture of remarkable uniformity thruout the entire range of the operation of the motor

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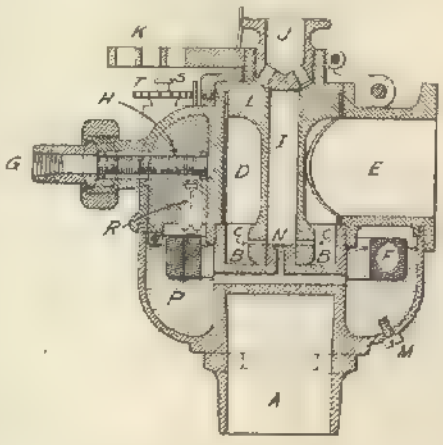

Sectional View Hagar Carburetor
For explanation of lettering see text

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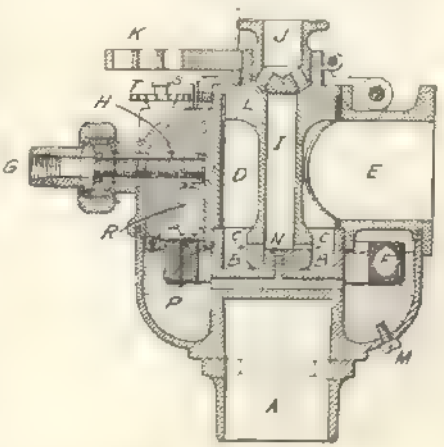

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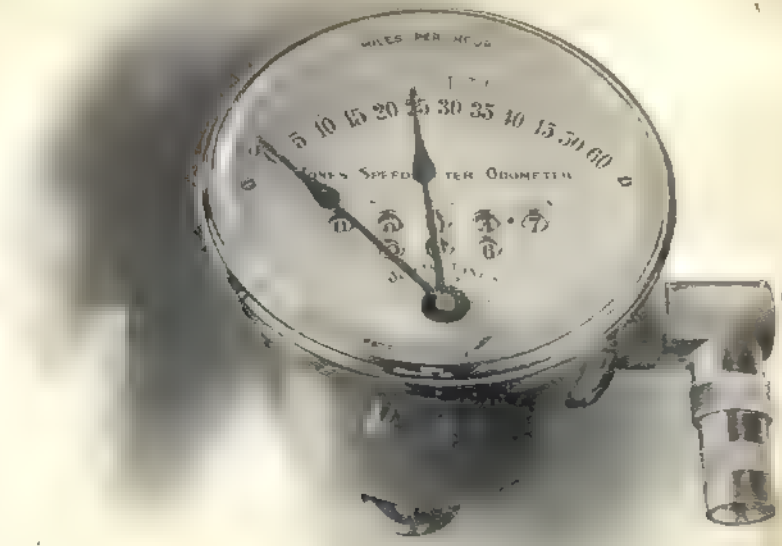

Two Hands are Better Than One

and the Jones Speedometer with one hand is the standard Speed Indicator of the world.

The "second" hand ind cates the Maximum speed.
It remains permanent at the highest point until reset by a push on the stem. The hand drops automatically and instantly to the speed at which the car is at that moment traveling.

The Jones Speedometer with Maximum Hand provides indisputable proof against unwarranted arrest.

When reset at officers command to stop, its protective value is obvious.

The resetting stem may be sealed, immediately revealing any unauthorized use of the car.

By a simple turn of the resetting stem the Maximum feature may be disposed with and both hands made to act as one, showing variable speed only.

Complete description of this remarkable instrument will be found in "The Speedometer," a bulletin on speed subjects. Simply send a request to Dept. 12.

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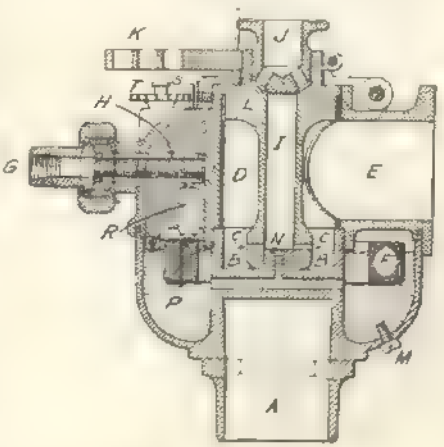

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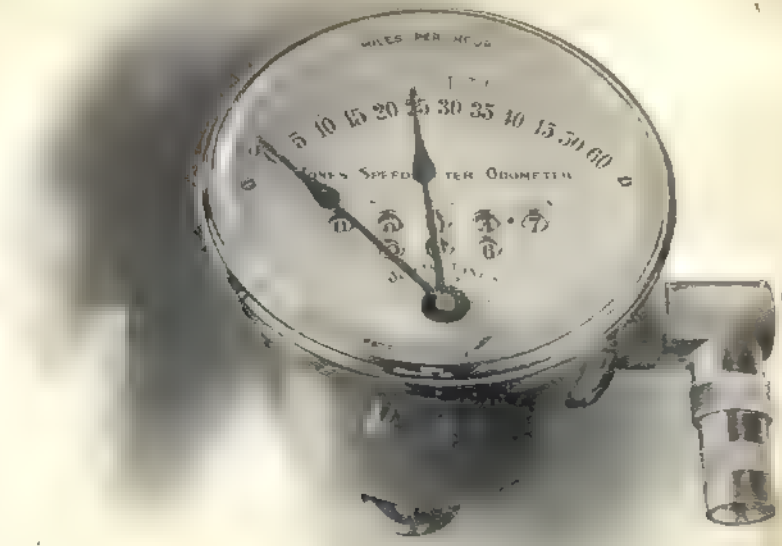

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The "Champion" Automobile Jack.

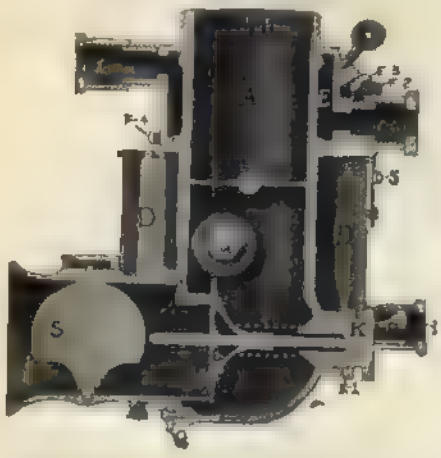
be packed in a very small space. This jack is made in three different sizes, taking cars from one to three tons.

The "Hall" Carburetor

We show herewith perspective and sectional views of the "Hall" carburetor, manufactured by the Charles E. Hall Co., 108 Broadway, Buffalo, N. Y.

The operation of the "Hall" carburetor is as follows

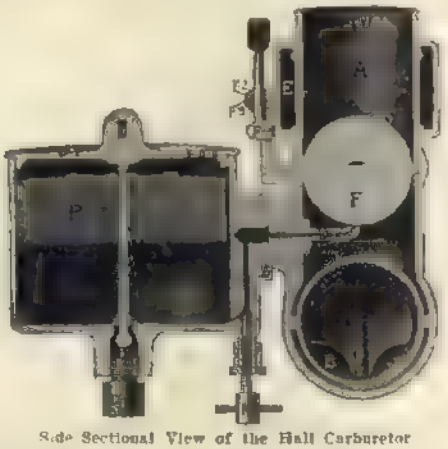
The supply of gasoline is obtained at the fuel supply connection (I) where it flows into the float chamber (D) around



End Sectional View of the Hall Carburetor.

the ball point of the float valve (D-3). As the chamber fills with gasoline, the float (P), which is adjustable on the float-valve stem, is raised, which brings the ball of the float valve (D-3) into its seat, thereby shutting off the inflow of gasoline, and so maintaining a proper level of the gasoline in the float chamber, which should be about 1-16 of an inch below the top of the spray nozzle (U); gasoline flowing to this nozzle, by means of the passage around the needle valve (N). The necessary air enters the mixing chamber at the air in-take (B), which is constantly open, except for the strangling valve (Q) which regulates the amount of voluntary air that is allowed to enter the mixing chamber

At slow speeds the automatic air valve (L) remains closed, and so closing the air port (except that portion controlled by



Side Sectional View of the Hall Carburetor

the strangling valve (Q), thereby causing a partial vacuum in the mixing chamber (A), accordingly, thereby lifting the required amount of gasoline from the spray nozzle (U), to give the proper mixture As the speed of the motor is increased and more fuel required, the increased vacuum automatically opens the automatic air valve (L), and so supplies the necessary additional air, thus automatically maintaining a perfect explosive mixture

Re-Charging Tire-Filling Tanks

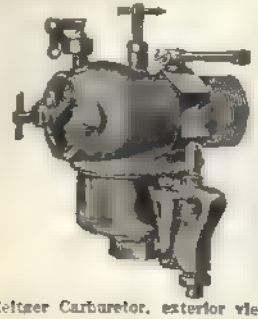
We have received from P C. Avery, of Milwaukee, Wis., a complete explanation of how to charge tire-filling tanks from the large drums of liquid carbonic acid gas, which can be purchased from any one of a dozen concerns in this country Two sizes of these drums are furnished, of 25 and 50 pounds capacity respectively.

To fill small tank proceed as follows: Turn the large drum of gas, bottom end up, with the valve down; support it on the wall by means of a strap or band of iron so that the valve will be about three feet from the floor, which is a handy distance

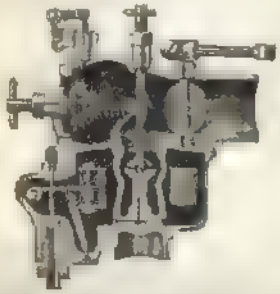
Use three or four feet of 20-gauge ¼ inch brass or copper tubing to connect the large gas drum and the tire tank. The tire tank should be set in a large bucket of cracked ice and salt, which will cool and shrink the liquid gas as it comes into it from the large drum. Open the valves connecting with each for a couple of minutes, and then close them off tight, and the tire tank is fully charged.

The Heitger Carburetor

The Heitger carburetor, manufactured by the Heitger Carburetor Co., 205½-207½ West South street, Indianapolis, Ind., is adapted for automobile, marine and stationary use on either the four or two-cycle type of vapor engine. It contains a number of new and original features that make it especially adapted to automobile use. The mixing chambers are constructed so that it produces just the right mixture for each particular condition, speed, load, etc., such as the mixture for cranking to start motor, the low throttle speed, the full throttle, low speed, hard pull and the full throttle high speed. It is compact, neat and light and will readily go in most any place on the machine. All adjustments, draining, etc., are made from the top. The gasoline level is readily adjusted to suit different requirements. This is done by the screw (5). Screwing it to the right lowers the level; to the left raises it. The float always lays in a horizontal position when float valve (7) is closed, whether the float is adjusted high or low. The tension on float valve spring (8) can be adjusted to suit a strong liquid pressure, as where the tank is high in a boat. The float chamber can be encircled around to any position to allow for attaching liquid feed pipe from any direction. It can be drained by merely loosening screw (29) from top. It requires no flushing. The starting plunger (22) is made to be pushed down by lever (20), so as to hold air valve (16) closed in cranking, allowing all air to pass thru suction tube (10), making a rich mixture for starting without spilling gasoline. There is a fine gauze strainer (28) around the base of the suction tube (10) to prevent dirt entering spray nozzle. Throttle can be set to open or close by either a push or pull motion, and throttle lever can be operated from either side or any point between. The makers are ready to send these carburetors to manufacturers or other responsible parties on approval and trial, and can make immediate deliveries on the ¾, 1 and 1¼ inch, either horizontal or verticle connection and on the 1½ and 2 inch in about 30 days.



Heitger Carburetor, exterior view.



Heitger Carburetor sectional view. 1. Main Mixing Chamber. 2. Float Chamber. 3. Float (cork); 4. Float Plates. 5. Float Adjusting Screw. 6. Float Lever. 7. Float Valve. 8. Float Valve Spring; 9. Float Valve Guide. 10. Suction Tube (main air inlet); 11. Spray Nozzle; 12. Gasoline Adjusting Stem; 13. Gasoline Adjusting Stem Lock Nut; 14. Gasoline Adjusting Stem Cone; 15. Air Valve Case (auxiliary air inlet); 16. Air Valve (leather); 17. Air Valve Spring; 18. Air Valve Adjusting Stem; 19. Air Valve Adjusting Stem Lock Nut; 20. Starting Plunger Lever; 21. Starting Plunger Lever Bracket. 22. Starting Plunger; 23. Throttle Disc; 24. Throttle Disc Screw; 25. Throttle Stem; 26. Throttle Lever; 27. Throttle Lever Clamp Screw; 28. Gauze Strainer; 29. Drain Screw; 30. Float Valve Guide Cap (not shown); 31. Throttle Stop Screw (not shown); 32. Air Valve Cage Screws (2) (not shown); 33. Gasoline Connection; 34. Gasoline Connection Nut.

Trade Printed Matter

The "Pittsburg" Automatic Vise & Tool Co., General Offices, Pittsburg, Pa., have just had published and sent out to the trade a very handsome and unique book advertising the Pittsburg Two Way Vises, and dealing particularly with their "High Speed" Bench Vise. The cover design is a vivid mill scene with the Pittsburg vise prominent in the foreground, surrounded by a wreath of Victory.

Morgan & Wright, Detroit, Mich., very patriotically celebrated the Fourth of July by issuing, in the name of 99 3-10 of the users of M & W tires, a declaration of independence printed in red and blue on white paper and bordered in red, white and blue. A little American flag was placed across the corner of each copy. The "declaration" was, very naturally, in the form of a boost for M & W tires.

The fourth of their series of route books has just been issued by the W. B. Co., of Cleveland, Ohio, and contains full particulars regarding the "air line" route to the Jamestown Exposition.

The Logan Construction Co., of Lithothe, Ohio, have issued a neat folder to illustrate the story of the trip of a Logan Big Six car about from the Lake to River; that is from Toledo to Portsmouth. The distance covered was 254 miles and as the folder tells the story it was accomplished "twixt dawn and dark."

New York Motor Fabric Co., Room 415, No. 32 Union Square, N. Y., have issued their first catalog of fabric specialties for the automobile trade, and it is a very creditable publication, containing 12 good-sized pages and a very neat cover. Their line of lamp covers, fire screens, etc., is very favorably presented and liberally illustrated.

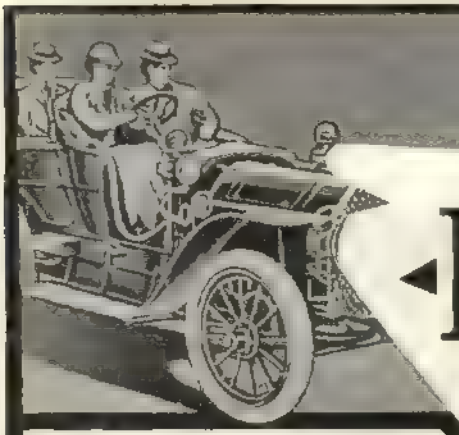
Tough Rider seat springs are both artistically and practically advertised in a fine-looking booklet called "Automobile Comfort," and issued by Ventilated Cushion & Spring Co., Fisher Bldg., Chicago.

The Locomobile Company of America, whose factory is located at Bridgeport, Conn., have issued thru their publicity department, which is in charge of J. A. Kingman, an inspection book for 1907 Locomobile Touring Cars. It is one of the most complete and useful pieces of printed matter ever issued by an automobile manufacturer, as it takes up the various difficulties or problems which confront the automobile operator and deals with them individually, intelligently and concisely.

It is a book 4½x7 inches in size and contains about ninety pages of text and illustrations. It has a table of contents with classifications, so that as a reference book it is very accessible.

These instruction books are sent to owners of Locomobiles in such form as will command attention and demand preservation. They are enclosed in a leather wallet which has a pocket on the opposite side, which can be used for maps and other data useful to the automobilist. If more manufacturers would consider the practical side of the automobilist and endeavor to fully enlighten their patrons it would be of great benefit, for such instruction books as the one referred to cover not only the mechanical aspects to the experienced automobilist as well, as the novice.

Bantam Anti-Friction Booster" is the title of a "yellow journal" issued lately by The Bantam Anti-Friction Co., of Bantam, Conn., and it represents, we are told, the combined efforts of everybody in the establishment from Mr. Rogers down. The "booster" is a 4-page sheet, 5 columns wide, and contains an immense amount of matter—jokes, local news, information about Bantam Bearings, etc., also some local advertising.



Helmet Oil

WILL SOLVE YOUR LUBRICATION TROUBLES

Few automobilists realize the importance of good oil.

They know in a general way that a car needs oil—and see that their car has "enough."

But good lubrication in an automobile isn't a matter of quantity—any more than it is in a watch.

After the man cleans your watch he oils it carefully with a special oil—that won't clog or gum or eat the metal—but will simply lubricate until the oil is evaporated

Now you know that the watch will run for a long time after that—without attention—because the *oil is made for that purpose*—and we say to you "You can get the same results on your car if you'll go at it right—and here's how"—

Helmet oil is to an automobile what the finest watch oil is to a watch—Bearings packed with Helmet Oil need no attention except at long intervals—same as a watch—because—

The same applies. It is made with that end in view. It won't run out of the bearings because it won't melt under 175° F. It won't freeze. It doesn't contain an atom of pitch or gum or acid It simply preserves a thin film of perfect oil between two frictional surfaces until it just naturally evaporates.

That is the most perfect form of lubrication known.

That is what Helmet Oil is doing daily on the finest cars in the world.

That is why it requires just half 50 per cent. less—Helmet Oil to run your car than any other brand.

This is no accident. It is the result of a scientific combination of high grade, refined ingredients *in exact proportions*. Helmet Oil will lubricate every bearing of your car.

But don't take our word for this Simply take advantage of the following liberal offer.

You'll never have the limit of satisfaction with your car until you do.

WE POSITIVELY GUARANTEE HELMET OIL

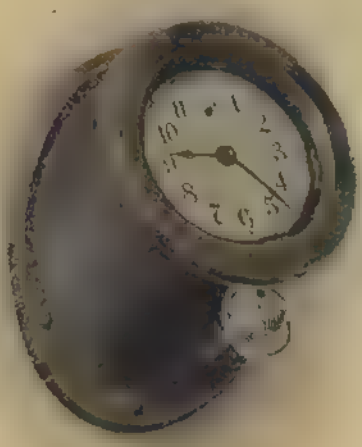
Send us your name and address and we will see that you get a sample cup of Helmet Oil Try it 10 days. If it does not save you 50 per cent over any soft oil you've ever tried return it to our nearest agent and no charge will be made for the oil used.

Our book "Auto Lubrication" sent free. Address

C. H. Besly & Co., 13 S. Clinton St., Chicago, Ill.

The "Ingersoll" Motor Watch

The accompanying cut shows the latest product of Robert H. Ingersoll & Co., 214 Jewelers' Court, New York City, gotten out especially for the automobile trade. The watch is the regular Ingersoll in a gold plate finish case with a dial especially designed with heavy numerals for quick reading and provided with a second hand.



The "Ingersoll" Motor Watch.

The holder which is fastened to the dash is made with a rich black finish of nica composition to imitate hard rubber. This holder is close fitting, impervious to water and dust, and can be washed without being damaged. The watch can be removed and carried in the pocket if desired. The list price of the device complete is $4 00.

New Automobile Clothing Novelties

Two new automobile clothing novelties have recently been brought out by the Chicago Auto Robe Supply Co., 159 Market street, Chicago, Ill., a fur-lined foot muff and a fur auto driving glove

The "Chicago" Dogskin Fur Gauntlet.

The driving glove is made of dogskin and is fleece lined The palm is of leather The throttle finger is separate; the other three being in one. The list price per pair is $1 25.

The foot muff is fur lined and is made in two styles. One is made of Brown Bear or Sheep fur-lined with plush cover, and lists at $3 75; the other of black dog fur and covered with genuine leather, listing at $5 50

The "Chicago" Fur-Lined Foot Muff

This concern has also made some improvements in its Spring Belt Robes, described in our February, 1906 issue, page [illegible] The main improvement in the 1908 styles lies in the shape of foot pockets, which are made to conform more to the lines of the foot. A new style of this robe is being offered, known as style No 10, made of double plush, rubber interlined and listing at $5 00 .

The "A-J" 1908 Wrapt Tread Tire

The Ajax-Grieb 1908 wrapt tread tire manufactured by the Ajax-Grieb Rubber Co., Fifty-seventh and Broadway, New York City, differs materially in construction from the previously made moulded tires inasmuch as it bears a cushion of pure Para rubber between the carcass and the tread varying in thickness from ⅛ to 3 16 of an inch, according to the size of the tire. It also has two breaker strips between the cushion and the tread which absolutely prevent the separation of the tread from the carcass

In curing the tire the carcass is first semi-vulcanized and the tread, which also varies in thickness according to the size of the tire is then put on raw and hand-wrapt, after which the whole tire is cured by the open steam process which toughens the facing and adds miles of wear to the tire. Every tire is guaranteed for 5000 miles

General Mfg Co., Elkhart, Ind., has begun to cater to the automobile trade, by doing general machine work and it also manufactures a line of drill presses of interest to automobile manufacturers.

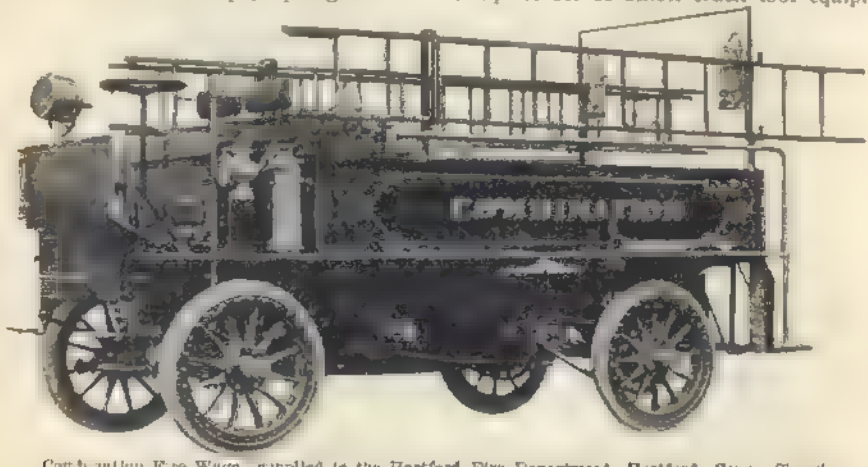
The Knox "Combination" Fire Wagon

HUGH DOLNAR.

This is a duplicate of an order supplied by the Knox Automobile Company, of Springfield, Mass., U. S. A., to the town of Radnor, Pa., which was very recently supplied to the city of Hartford, Conn. The chassis is the Knox Waterless Model D6, and the body and entire construction above the chassis was placed by the C. N. Perkins Company, Lawrence, Mass. The Perkins Company are builders of horse-drawn fire apparatus, and make a specialty of fire extinguishers, ladders and fire wagons and fire department equipments genera ly

This Fire Automobile is what is known as a "combination," the equipment consisting of fire axes, fire ladders and fire extinguishers. A third car of about or exactly the same construction was sold by the Perkins Company to the fire department of Newburg, N. Y., same chassis supplied by the Knox Waterless Shops, Springfield

way as to play one or both at the same time or to refill one while playing the other. To provide a basket of perforated steel containing 200 feet ¾-inch chemical hose with two nozzles of different sizes. To provide also a 12-foot roof ladder on one side of the body and a 20-foot extension ladder on the other side of the body with substanital hangers for same. To provide a foot board on the rear with side and rear hand rails as shown, with space for carrying two 2-gallon hand extinguishers or two acid receptacles. To provide two 3-gallon hand extinguishers, placed one on either side of the body near the front. To provide a box for carrying wrenches and other tools, suitable brackets for carrying two hose nozzles (not furnished) and one plaster-hook, one axe, one crow-bar with suitable brackets, two hand-lanterns for fire purposes with necessary brackets at rear of body, two automobile oil lanterns and one 7-inch Rushmore acetylene gas searchlight and generator; one complete set of Knox truck tool equipment.



Combination Fire Wago. supplied to the Hartford Fire Department, Hartford, Conn. Chassis by the Knox Waterless Shops, Springfield, Mass. Body and equipment supplied by the Perkins Company, Lawrence Mass.

Its complete specifications are: Engine—Two cylinders, opposed, 5x7, air-cooled, 20 H. P. Transmission—Two speeds forward and reverse, planetary type. 100-inch wheel base, tread 56 inches front, 58 inches rear. Tires—34x4, Hartford, solid Springs—Semi-elliptic, 46 inches rear, 40 inches front. Bearings—Timken roller, front wheels and rear axles. Brakes—Pedal brake on counter shaft, lever brake on both rear wheels. Steer—Hercules wheel. Speed—15 miles per hour. Body—10½ feet long, 56 inches wide inside, 18½ inches high inside Carrying capacity for 1000 feet 2½-inch standard hose (not furnisht). Equipment—One pair of 25-gallon chemical engines made of the best Lake Superior copper of standard make, with Holloway pattern top The chemical tank to be placed lengthwise in front end of body, each side and 24 inches apart, allowing unobstructed access to the automobile engine beneath at all times without disturbing the fire equipment. Chemical engines or tanks are piped in such a

This is the third machine of this kind supplied by the Knox Waterless Company, the enthusiastic approval of the first, supplied to the Radnor (Pa.) Fire Department, having led to the placing of the Newburg, N. Y., and Hartford, Conn., orders.

There is every reason for the use of mechanical traction in fire department equipment, and the Hartford Fire Department, purchaser of the fine combination wagon here shown, was one of the first, if not the very first, in the United States, to make satisfactory and continued use of self-propelled steam fire engines.

The Knox chassis is giving great satisfaction in fire department service, being always ready to go out of the door as soon as the alarm sounds, and making much faster time to the fire than horse-drawn wagons can. The appearance of this fine piece of fire fighting apparatus excites the pride of the force that has it, and the price is reasonable. Weight 4000 pounds. Price $4000

The Season is on—Get Busy—Do it Now

"MANHATTAN" 20-Passenger
Hattan Cross Seat, Price $5000

FOR TRANSPORTATION LINES, PLEASURE RESORTS, HOTEL WORK, ETC.

Practically the only successful gasoline busses in operation are those which we have manufactured. We make them to carry from 16 to 30 passengers. As an evidence of their practicability, both from a service and profit making standpoint, we draw your attention to the 20 cars which have been operated the last year between New York City and Coney Island. These busses have carried over 300,000 passengers at the rate of $1.00 a head. **Sometimes each one of these busses have made five round trips a day, a total of over 200 miles.** With the exception of tires, the cars are practically in as good condition to-day as when they went into service.

Our passenger coaches have been in use for five years in all parts of the country, also Cuba and Mexico and are paying large dividends to the companies operating them. MANHATTAN BUSSES are not an experiment but an assured fact, and have demonstrated their reliability in actual service. They are sure profit makers. Capacity 16 to 30 passengers. Bodies in different styles. Upholstering in Cane Seats or Leather.

OUR MOTTO—SIMPLICITY STRENGTH DURABILITY and Plenty of Reserve H P

MACK BROS. MOTOR CAR CO., Allentown, Pa.

ANNOUNCEMENT

INDESTRUCTIBLE STEEL WHEEL CO.

Successors to TURNER & FISH CO.

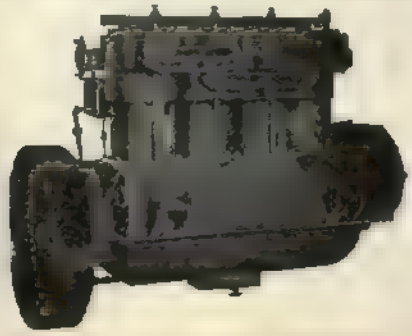
Manufacturers of All Kinds of

AUTOMOBILE STAMPINGS

Send Drawings and Specifications for Prices

Our STEEL WHEEL Our STANDARD of WORKMANSHIP

Works: LEBANON, IND. : Office and Salesroom: 1903 Michigan Avenue, CHICAGO



Automobile and Truck

MOTORS

16-18 H. P.
24-30 H. P.
45-55 H. P.

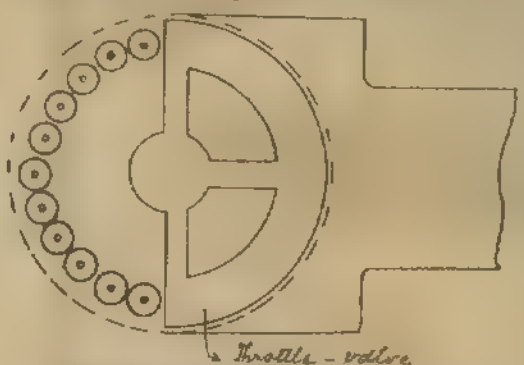
HERSCHELL-SPILLMAN CO.
W. Tonawanda, N. Y.

The Krause Carburetor

This is a new carburetor just placed on the market by R. E. Krause, 8612 Wade Park avenue, Cleveland, O., and has been designed with the usual idea of obtaining perfect mixtures regardless of the speed of the engine. Instead of having one

The Krause Carburetor, exterior view with screen jacket removed.

large opening for the admission of air and a single jet for the admission of gasoline into the mixing chamber, this carburetor has a number of small openings each of the same size. These openings are in a half circle, and the diagram of the throttle valve, herewith shown, gives a good idea of the arrangement of the same. The



Air passage and throttle valve in the Krause Carburetor.

row of small circles in the middle of the larger concentric circles, represent the gasoline jets while the larger circles represent the air inlets. The throttle valve consists, practically, of a semi-circular disk which of course can be moved to cover all or any number of the openings. Each little gasoline jet and its surrounding air passage form a perfect little carburetor, and no matter how many or how few are uncovered the proportion of gasoline and air, as well as the velocity of the air, all remain in the same relation.

Another feature of the Krause carburetor is the fact that a large screen is used at the gasoline entrance, which is not easily clogged, and can be very quickly removed for cleaning, if necessary. A band of gauze surrounds the entire carburetor, forming a screen jacket which prevents dust and foreign particles being sucked in. The accompanying exterior illustration shows the carburetor with this gauze jacket removed.

The "B B" Turner Safety Alarm Pump

This pump is constructed upon the compound principle, and is the product of the Turner Brass Works, Sycamore, Ill.

A feature of this pump is that it is fitted with a safety pop or alarm, which can be adjusted to pop at any pressure from 50 to 100 pounds instantly, thereby preventing one tire getting more pressure

The "B B" Turner Safety Alarm Pump.

than another, in turn distributing the weight of the car equally.

The length of the pump over all is 24 inches. The handle is 8 inches wide. The tubing is 1¼ and ⅞ inch diameter, No. 18 gage. An extra heavy 4-ply reinforced hose, 30 inches long, is furnished, fitted with either Keno or Michelin connection. The price of the pump in dipt brass is $5.00, and in polished brass $6.50.

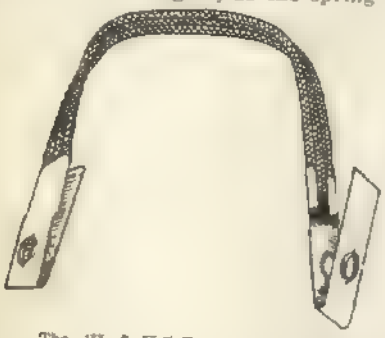
Our next number, the January Journal, will contain as its most important feature a directory of all active manufacturers in this industry, with all manufacturers' names and addresses classified according to their products. A glance shows all the makers of any particular product. This number is of greatest value to the tradesman who wants to be up-to-date, and every dealer and maker not at present subscribers to the Journal should remit $2 00 at once and start their subscriptions with the January Journal.

"H. & H." Dry Cells and Connectors

H. & H. Dry Battery Co., South Bend, Indiana, have placed on the market a dry cell for ignition purposes of 1.6 voltage and 25 amperage. They are also manufacturing

The "H. & H." Dry Battery

a simple but efficient connector. This connector has spring clips on the ends pierced by holes concaved to admit the convex thumb screws on the cell poles. The thumb screws need not be tightened any further than can be done by the fingers, as the spring clips



The "H & H." Dry Cell Connector

prevent their working loose. Three flexible cables are used to insure a good connection even in the event of one or two getting broken.

Matchless Light Electric Cigar Lighters and Inspection Lamps

The Matchless Light Co., Caxton Building Cleveland, Ohio, are offering to the auto-

The Matchless Light Electric Inspection Lamp.
The Matchless Light Electric Cigar Lighter.

mobilist two novelties in the shape of an electric cigar lighter and an electric inspection lamp.

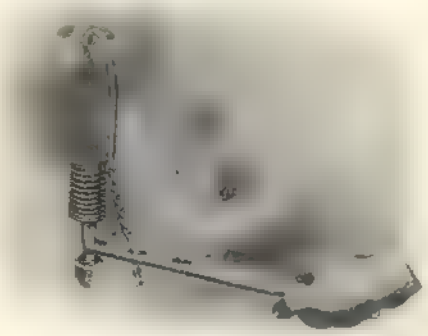
The cigar lighter is operated by pushing a button, which connects the current supplied from the sparking batteries. It draws about half an ampere—and only when in use. The cigar lighting part is renewable at a small cost. The inspection lamp is operated in the same manner and consumes the same amount of current as the cigar lighter. The lamp gives about 8 candle-power, and is mounted in front of a strong reflector Ten foot of cord is furnished. Price of combination outfit complete is $3.50, which includes one socket or holder and both lamp and cigar lighter attachments, the same socket being used with both

The "White" Flexible Valve Remover

We show herewith the White Flexible Valve Remover, manufactured by Sam G White Co., Talcott Bldg, Providence, R. I

The feature of this tool is the chain, which on account of its flexible nature allows quick operation around pipes and adjacent fittings, thereby overcoming the problem of getting at the valve where pipes and fittings are in the way.

The chain can be adjusted to different lengths by sliding the same in and out of the holes in the fulcrum lever. The holes in the lever are irregular, permitting the chain to slide thru freely at the large end, while



The "White" Flexible Valve Remover

the small end being smaller than the widest part of chain link, catches the latter and holds the chain at any desired length. In removing a valve where valve, spring and key are surrounded by pipes, the cap is first removed from engine, and the hook placed on top of valve, running the chain between pipes and down to lever. The lever is then placed under chain washer, chain adjusted to best leverage, and lever given a slight downward movement compressing the spring enough to allow removal of the key The valve can be replaced in the same manner. The list price of the device is $2.

The White Company, of Cleveland, Ohio have contracted for the complete equipment of the tanks of all "White" steamers with "Triumph" Gages, made by Boston Auto Gage Company, of Boston, Mass.

The "Nu Zent" Carburetor

The Nu Zent carburetor is manufactured by the Nutting Machine Co., of Dayton, O., and claims a new principle of carburetor control, which automatically increases the amount of vapor in proportion to the speed of the engine, insuring a uniform opening at all engine speeds.

The operation of the Nu Zent is as follows: The suction at (H) causes pure air to enter at (L) and pass up past the spray nozzle producing a suction there which lifts the gasoline and throws it against the under side of the pulverizing cone (A) causing it to spread out thinly over a large surface which gives the air a perfect action on it. Now gasoline and air are drawn around the sharp edge of cone (A), the mixture being then thrown hard against the corrugated surface on the inner side of the auxiliary valve (B), and in turn then passes up and thru (H) to engine.

The "Nu Zent" Carburetor, sectional view. A, Pulverizing Cone; B, Auxiliary Air Valve; C, Throttle Valve; D, Throttle Valve Lever; E, Lock Nut; F, Adjusting Screw for Auxiliary Valve; G, Tension Spring for Auxiliary Valve; H, Outlet to Engine; I, Vacuum Chamber; J, Auxiliary Air Inlet; K, Cork Float; L, Air Intake; M, Needle Valve; N, Packing Nut; O, Drain Cock; P, Gasoline Intake; Q, Float Fulcrum Lever; R, Needle Shut-off Valve; S, Valve Guide Cap; T, Needle Adjustment Lock Nut; U, Float Adjustment; V, Float Chamber; W, Mixing Grooves.

When the air supply from (L) is not sufficient, then the auxiliary valve (B) is lifted by a vacuum formed between the upper side of the auxiliary valve (B) and the under side of the upper case, causing pure air to enter at (J) which is an opening around the entire circumference of the carburetor.

When the engine speed increases enough to lift auxiliary valve (B) caused by vacuum (I), the opening between pulverizing cone (A) and the under side of the auxiliary valve (B) becomes larger in proportion to the speed of the engine, insuring a uniform opening at all engine speeds.

The Victor Shock Absorber

This shock absorber is of the hydraulic type, and one of its main features is an arrangement by which the liquid is permitted to pass quickly or slowly from one side of the plunger to the other, according to the force of the jar or shock caused by road unevenness. This feature makes the device a true shock absorber, causing it to resist only violent spring action, and thus giving the regular springs proper play on smooth or fairly smooth road surfaces.

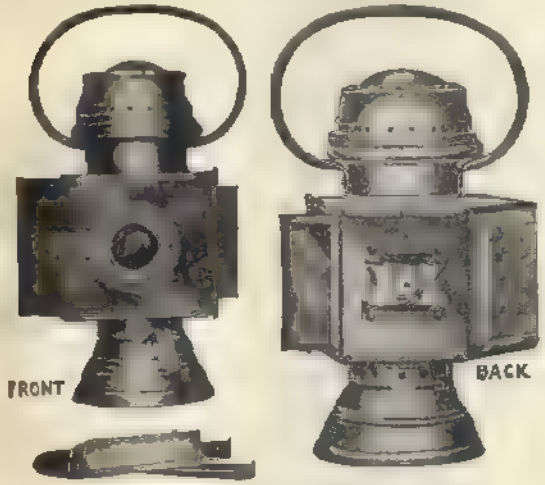
The Victor Shock Absorber. 1, cylinder; 2, liquid by pass; 3, adjuster or regulating lock nut; 4, adjusting screw; 5, graduating rods; 6, piston or plunger; 7, hole for refilling; 8, cylinder top; 9, packing box lock nut; 10, packing box; 11, connecting rod; 12, top knuckle connection.

The illustration of the device partly in section displays the constructional features

"Phoebus Tattle Tale" Tail Lamp

In addition to the "Phoebus" Lamps, described in the February issue, page 356, the Manhattan Screw & Stamping Works, Seventh avenue and Eleventh street, New York City, also include in their 1907 line the "Phoebus Tattle Tale" Tail Lamp, herewith illustrated.

With every "Tattle Tale" rear lamp they furnish a mirror to be fastened at the side of the car in sight of the driver, the mirror reflecting the light so that the driver can keep tabs on the operation of the lamp. A ruby glass shows a red light to the rear, a side glass illuminates the license number and the front light is thrown forward to the mirror. This lamp is attached like the ordinary tail lamp. It measures 11 in. high and 7 in. wide.

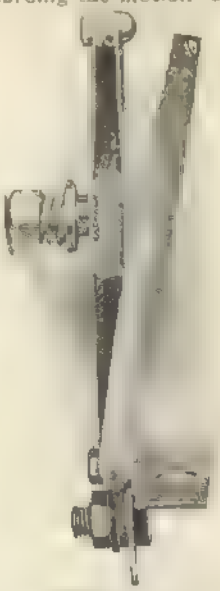


"Phoebus Tattle Tale" tail lamp and the "Tattle Tale" mirror used in connection with it.

The "Gabriel" Shock Brake

The Gabriel Horn Mfg. Co., 977 Hamilton avenue, Cleveland, Ohio, have brought out a new type of shock absorber, called the Gabriel shock brake, which is adjustable to either elliptic or half-elliptic springs, and may be used on any machine of any size or model.

The two sides, which are made of high grade spring steel, are separated at their extremities by a steel block and are securely bolted together. The lower extremity fastens under the clip of the spring by an angle steel plate, thus forming a simple and firm attachment. Between the two sides of the spring is a double steel plate securely riveted to a stud which extends thru a slot in the side of the brake nearest the frame and attaches thereto. These double plates are recessed in such a manner as to receive and firmly hold a friction composed of camel's hair belting, which bears against the inside of the side plates. When riding over smooth roads the friction device remains at its normal position midway between the two extremities of the brake. This friction device is thicker than the space between the two side plates at the end of the brake, thus causing the friction to increase as the same nears the end of the brake and gradually retarding the motion. The spring



The "Gabriel" Shock Brake.

ing of the side plates allows a free movement of the friction device when it is in the centre of the brake, thus causing the spring movement to be practically free when the car is passing over small obstructions.

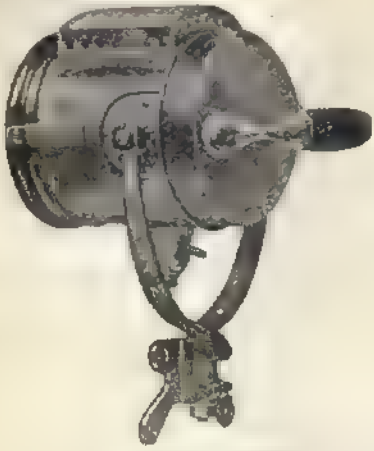
Side motion of the car is provided for by making an elongated hole for the bolts which bind the side plates at the top, thus allowing each side plate to move independently of the other. The open space between the two sides of the spring is protected by a thin strip of steel which gives the article a handsome appearance and prevents mud and dirt from entering the brake. It is made in three sizes.

Morgan & Wright, of Detroit, Mich., are now supplying the Midgley tread on their Dunlop and Clincher tires.

H. L. Warner, formally conected with the Munice Auto Parts Co., informs us that he has severed all his associations with that company, having sold his stock in that concern, and started a business of his own, known as "The Munice Gear Works." He is prepared to do any and all kinds of bevel and spur gear work, on Bilgram generators and other tools. Also furnish H. L. sliding gear transmissions, selective type, for direct or double chain drive, disc and cone clutches, with slip joint connections and selective or progressive type control levers, machine work and blue prints.

"P. M. S." Lamps and Generators

The Pierson Motor Car Supply Co., 1173-1177 Bedford avenue, Brooklyn, N. Y., are jobbers and importers of an extensive line of automobile parts and accessories. They also manufacture a line of lamps and generators which we herewith illustrate



The "P. M. S." Searchlight

The P. M. S. searchlight is made either with or without swivel bracket or it is supplied with a deck bracket for use on motorboats. It is made in two grades; one with a Bausch and Lomb reflector and the other with a French mirror, at prices from $7.00 to $17.50 each. It is made in three sizes, 6, 7 and 8 inch. It is of high-grade construction, and has copper front and back. The lamps are made of heavy gage metal, and the swivel lamps have massive brass brackets with steel shanks and elaborate tilting handles. These lamps have adjustable burners.

The "P. M. S." Generator, No. 2, showing shifting grate, etc.

The small P. M. S. generator, No. 1, will hold one pound of carbide. This generator is made in a larger size, No. 2 (not illustrated), which holds a pound and a half Both of these generators are supplied with two-way cocks.

The No. 3 generator, here shown, holds two pounds and a half of carbide. The generators have a sifting grate which prevents clogging, and are claimed to furnish a pure white light. They are easily taken apart, and do not generate gas when the valve is turned off. The Nos. 1 and 2 generators are recommended for small cars, and the No. 3 generator for large cars. The price of No. 1 is $7.00; No. 2 $9.50 and and No. 3 $12.00, with a liberal discount to dealers.

The "P. M. S." Tail Lamp.

"P. M. S." Generator, No. 1.

The P. M. S. tail lamp burns kerosene oil, and sells for $2.75 each.

They also make the P. M. S. vulcanizing outfit. This is one of the conventional tire repair outfits which is put up in a small wooden box, consisting of ¼ pint of acid cure, ¼ pint rubber cement, piece of sandpaper, emery paper and 2 brushes. This outfit retails complete at $1.00

"Auto-Shine"

The "Auto-Shine" Polish Company, of Buffalo, N. Y., manufactures a high grade varnish polish which is compounded especially for automobile work and is the invention of a practical painter of forty years' experience in the finishing of the highest class of carriages

This preparation cannot injure the finest finish because it contains no solid matter of any kind. The makers claim that it will not pit the surface; contains no gums or other sticky substance; will not stain a white or other light colored finish and will not collect dust It removes hand marks and grease spots and restores the original lustre with little effort.

It has been used two seasons by the E. R. Thomas Motor Co., and the Buffalo Automobile Station Co., to the exclusion of all other varnish polishes

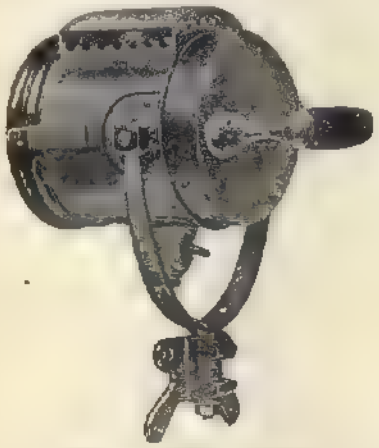
The preparation is called Auto-Shine and is put up in quantities from ¼ pint to 1 gallon On receipt of 5 cents postage, the company will send a generous sample, large enough to polish the average size touring car. Prices range from 25 cents for a quarter pint, to $3 for a gallon. The manufacturers will pay expressage on trial orders of a half gallon or gallon

---

Crown Battery Co, of New York City, are moving into a new factory at 992 Southern Boulevard, where they will be enabled to increase their output four-fold.

"P. M. S." Lamps and Generators

The Pierson Motor Car Supply Co., 1173-1177 Bedford avenue, Brooklyn, N. Y., are jobbers and importers of an extensive line of automobile parts and accessories. They also manufacture a line of lamps and generators which we herewith illustrate



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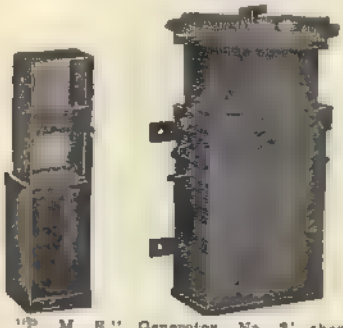

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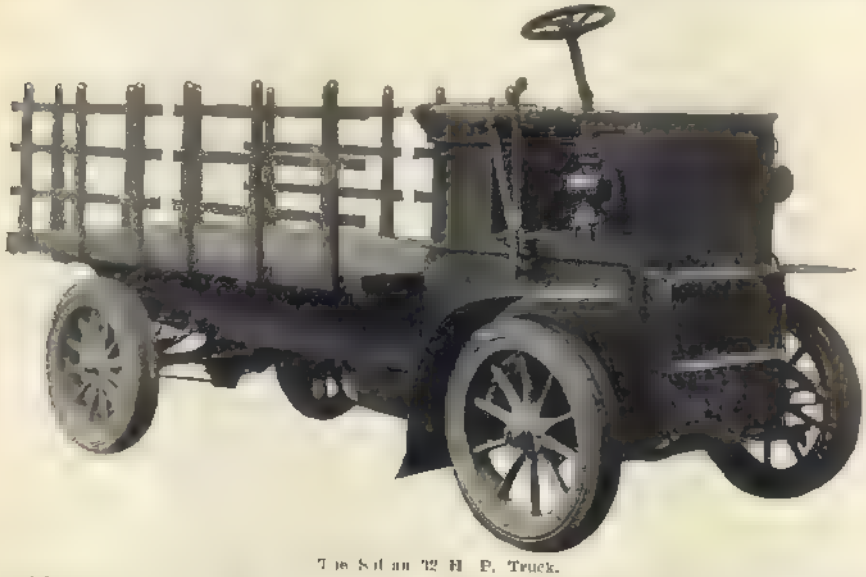
The Sultan Truck

HUGH DOLNAR.

This is a new Truck, first one now on the road, built at the Elektron Shops, Springfield, Mass., by the Sultan Motor and Car Company, 121 West 89th street, New York City.

The chassis is the same general construction as that of the Sultan touring car, described in another part of this issue of "The Journal." The motor is 32 H. P. The brakes are larger and more powerful for the truck, but the control and change gear are the same, save for lower reduction ratio.

The specifications of this truck are as follows:



The Sultan 32 H. P. Truck.

Wheel-base 116 ins., gage 56 ins., tires solid, double-face, large diameter 34 ins., width of tires 6 ins. over all.

Clear platform 114 ins. long by 60 ins. wide.

Nominal paying load 4000 lbs.

Motor, nominal 24-32 H. P. Must show 32 H. P. at 1250 R.P.M. Price $3000.

Commercial Vehicle Notes

The automobile bus line between Dubuque, Platteville and Cuba City, Wis., became a reality on May 5 when the first trip was made. The organization of the line is known as the Idaho Automobile & Electric Transportation Co.

About June 1 an automobile stage line was inaugurated between Anatone, Asotin, Clarkston and Lewiston, Wash.

Benjamin T. Babbitt, of Clayville, and Walter H. Stephenson, of Whitesboro, have formed a copartnership and will run an electric bus line from Utica to Clayville.

The Rutgers Hose Company of Newburgh, New York, have received their new automobile fire apparatus.

The Local Public Service of Cincinnati will purchase three more trucks to be used by the street cleaning department for hauling ashes.

The Standard Oil Company of Cleveland in April placed an order for a gasoline truck.

Stix, Baer & Fuller of St. Louis, Mo., have purchased a motor delivery wagon for delivering groceries and meats.

The Cleveland Electric Illuminating Company, which has for some time past been using an Riker electric truck, has recently purchased a 2500-pound capacity Studebaker electric wagon, fitted with an open express body, and with an extra closed body that can be interchanged with it.

The Independent Hose Company, of Frederick, Md., the oldest volunteer fire company in Maryland, will purchase a combination motor fire engine and hose wagon at a cost of $4500.

The Raymond Brewing Company, of Wheeling, W. Va., has purchased a two-ton Studebaker electric truck.

A Stanley steam runabout has been purchased for the use of Fire Chief Allen, of Trenton, N. J.

A new motor patrol wagon has been placed in the service of the police department of Richmond, Va.

James E. McMary Company, local agent in Pittsburg for the Studebaker line, recently received an order from the Safety Armorite Conduit Company, of Pittsburg, for two 3½-ton Studebaker electric trucks.

Hopedale, Mass., has bought an electric combination chemical engine and hose wagon for its fire department.

If the plans of the recently incorporated Langhorne Transportation Company are carried out, Langhorne and Morrisville will be connected with motor stages.

E. B. Pease, of Omaha, Neb., has established a regular omnibus service between the railroad stations and principal hotels with a sixteen-passenger Knox bus.

The R. H. Macy & Co., large department store owners in New York City, after using fifteen electric vehicles in their delivery service for four years have doubled their equipment.

The Board of Police Commissioners of Baltimore, Md., have purchased a motor patrol wagon.

A commercial vehicle will be placed in the delivery service of the Brandywine Electric and General Repair Company of Wilmington, Del.

The Canada Sugar Refining Company, of Montreal, Can., has placed in service one 5-ton Knox truck, purchased from the Wilson Automobile Company.

An electric bus makes two round trips daily between Almont and Romeo, Mich., which towns are nine miles apart.

COMMERCE TRUCKS

TRADE MARK

Built for Commercial Purposes

4-CYLINDER 4-CYCLE

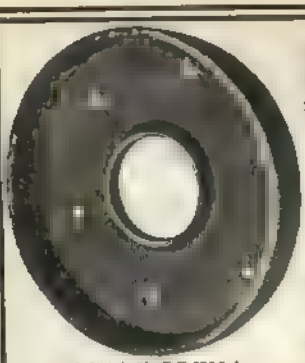
POWERFUL — ECONOMICAL — RELIABLE

2½ to 5 Tons Capacity

BODIES, TRUCKS, SIGHT-SEEING BUSSES, MOVING VANS, HOTEL BUSSES, ETC.

Full particulars on application.

AMERICAN MACHINE MFG. CO., - DETROIT, MICH.



"BRAKE DRUM"

How to Make AUTOMOBILES

LIGHT AND STRONG

Use Sheet Metal Stampings in place of Castings.

Headquarters for difficult forms in Sheet Steel, Brass and Copper.

THE CROSBY COMPANY, - BUFFALO, N. Y.

L. CHAS. KENEN

French Automobile Designer

We furnish designs, with complete working drawings, specifications for materials, best treatment of steel, etc., for motor cars, trucks, omnibuses, delivery wagons, auto boats and railway motors.

Our experience, gained by many years of work in the best French shops, assures rapid and successful results, without experiments whatever.

Correspondence Solicited.

1 MADISON AVE. **NEW YORK, N. Y.**

THE HUBBARD PATENT TIRE

ONLY PRACTICAL TIRE FOR THE COMMERCIAL VEHICLE

Wears like iron—Rides like rubber

Correspondence solicited from manufacturers and users of commercial vehicles to whom we can guarantee greater tire satisfaction than they have had heretofore.

ARTHUR H. MIDDLETON, 2821 N. Broad St., Phila., Pa

The Car of Quality

The SOULES LIGHT [illegible] VERY CAR 22 H. P. two cylinder horizontal opposed, [illegible] gear drive. THE CAR THAT HAS BEEN TRIED AND FOUND NOT WANTING. Agents wanted. [illegible]

Soules Motor Car Co.

Sales Dept., 736-740 WOODWARD AVE., Detroit, Mich.

3 TON AMERICAN MOTOR 5 TON

TRUCKS

FOR ALL PURPOSES

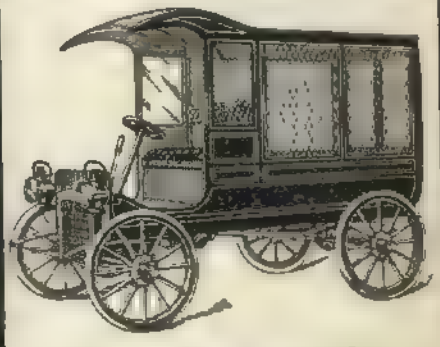
AMERICAN MOTOR TRUCK CO., Lockport, N. Y

THE RAPID

"The Car That Runs"

Commercial vehicles of all types, for all requirements. Write to

B. M. HENRY, Sales Manager,
PONTIAC, MICH



A light and powerful

DELIVERY CAR

Correctly designed and carefully built

Load capacity, 1000 lbs.
Price F. O. B. Lockport, $1000 00

COVERT

MOTOR VEHICLE COMPANY,
Lockport, N. Y.

"American" Wire Washers

Hobbs Manufacturing Co., Worcester, Mass., make a specialty of washers for automobile use, their washers being made from wire by a special patented process and marketed under the trade name, "American." The Hobbs process produces washers of accurate form and finish, free from burrs, smooth and uniform. A large variety of shapes and sizes are of course included in the Hobbs line, and the few shown herewith are merely suggestive of the line.

The "National" Lock Washer

The "American" Flat, Round Edge Washer

The "American" Flat Lock Washer

The "American" Flat Spring Washer

One pattern, the "National," is a lock washer, and furnished in all sizes. Another pattern of lock washer is a perfectly flat spring washer made in 3-16 to ⅝-inch sizes. This pattern gets its locking power entirely from the spring of the metal. There is also a plain pattern made of rectangular wire with the center slightly thicker than the rim. A flat, round edged pattern is furnished in 3-16 to ⅝-inch sizes, and a plain ring type made from round wire. In the flat patterns they supply copper and brass washers in sizes from 3-16 to ⅝-inch; also a lap joint type and a V-joint type

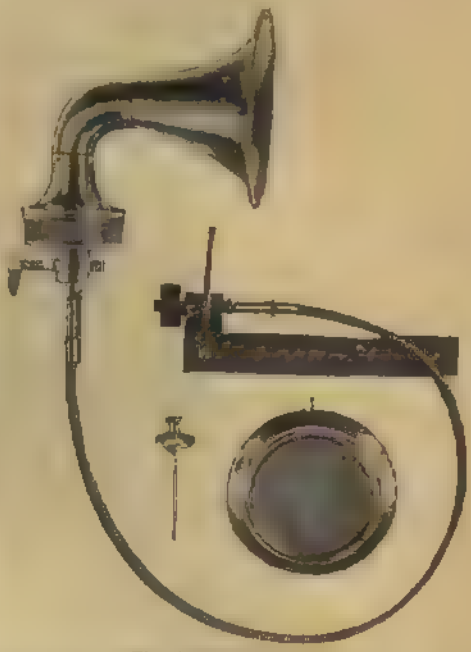
New Hancock Specialties

The Hancock Manufacturing Co., of Charlotte, Mich., in addition to their extensive line of valveless force feed lubricators for automobiles, are now manufacturing gasoline and water tanks, fenders, monograms, coat and foot rails and brass pipe fittings; also the Hancock Tank Gage, which is separately described in this issue. The tanks and fenders are made to customers' specifications. Two styles of coat rails and two of foot rails are included in their line. These rails are all first-class quality, highly polished and lacquered. Their line of brass pipe fittings includes a variety of tees, cross elbows, return bends, couplings, plugs, bushings, lock nuts, unions, etc., and is quite complete.

C. P. Brown, formerly of the Motor Car Equipment Co., of New York City, has been appointed manager of the Motor Mart Sales Co., Motor Mart, Broadway and Sixty-second street, New York City.

The National Siren

The National is a new siren just placed on the market by Wm. S. Jones, 112 North Broad street, Philadelphia, Pa., and is mechanically operated by a pulley, which is brought into contact with the engine fly wheel by means of a pedal and suitable shaft. The tone can be varied from a soft hum to a very loud blast. The moving parts run on ball bearings, and the whole



The National Siren.

thing is constructed for durability. Besides it is ornamentally finished, and of course adds to the attractiveness of the car. All the openings are protected by screens of fine mesh gauze. The price is $25 complete ready for installation, including a steel wire flexible shaft of 5-16-inch diameter and 4 feet long, a polished brass pedal and all fittings needed.

Get in line for all the benefits of the early issues of the Journal for 1908. The next number will be the Eighth Annual Buyers' Guide Special, the February number will be the Boston Show number, and the March number will contain the Eighth Annual Complete Vehicle Review. Subscribe at once to commence your subscription with the January number.

The Ed. Verstraete Manufacturing Co., 421 Clinton street, Milwaukee, Wis., is manufacturing auto and marine specialties, such as clutches, rollers, pumps, rings, tools, dies, bevel gears, push rods, cleavises, valves and cams. This concern makes a specialty of cam grinding, and also employs an automatic machine for slotting nuts such as are used on connecting rods.

Standard tire equipment is Ajax 30x3, tread 56 inches, wheel base 88 inches. The car weighs about 1200 pounds. The equipment included in the price $750 is simply tools and mat, the detachable tool box and rumble seat are $50 extra, and the double surrey seat is $100 extra.

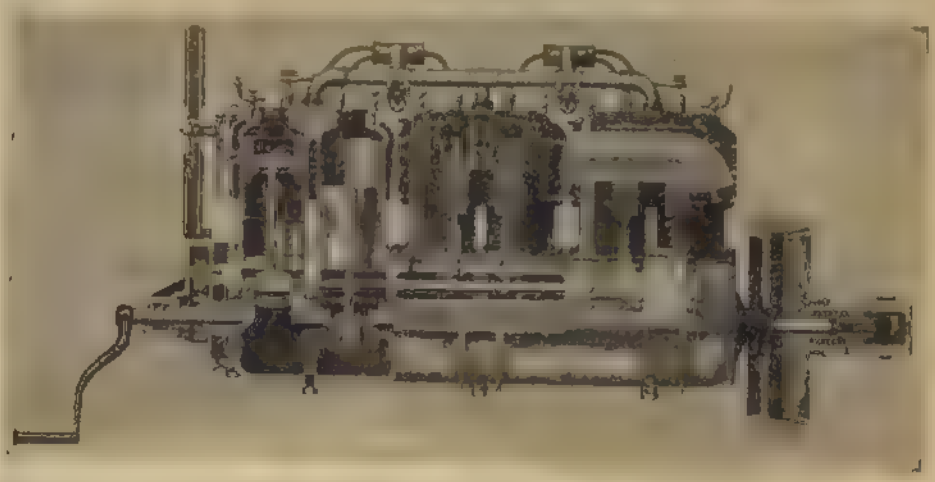
The company claims this engine is as perfectly balanced as the usual 4-cylinder motor and will give no more vibration; thus the advantages of the vertical motor are retained without the weight, cost, additional parts and upkeep expense of the 4-cylinder car.

The "Thor" Six-Cylinder Motor

HUGH DOLNAR.

The Aurora Automatic Machinery Co., Aurora, Ill., U. S. A., Brandenburg & Co., selling agents, No. 85 Lake street, Chicago, Ill., and 103 Reade St., New York, U. S. A., offers the 6-cylinder "Thor" motor to the 1908 trade, as here shown and described.

The rapidly increasing demand for six-cylinder motors and the care shown in the design and construction of this new six-cylinder, which is so recent a production that the first, and, as yet, the only "Thor Six" in existence is that exhibited at the Palace and Garden 1907 Shows, gives this first story of the Thor Six decided interest.



The "Thor" Six-Cylinder Automobile Motor.

The Aurora Automatic Machinery Company was incorporated in 1894 to manufacture and sell the now well-known "Thor" Bicycle Components, and took up the motorcycle motor, a single cylinder, 4-cycle, air-cooled 1⅝x3¼ inches nominal 2 H. P., as its first gas engine venture, in 1902. The "Thor" pneumatic tools were brought out in 1904, and the Aurora Manufacturing Company is now working about 700 men on fine repetition machine productions, has an excellent machine tool equipment, and is fully prepared to fill orders promptly.

The Thor six-cylinder vertical motor, which is shown herewith partially in section, was designed with the sole intention of producing the very best six-cylinder, 4-cycle, water-cooled motor possible, with no regard to either labor or materials cost.

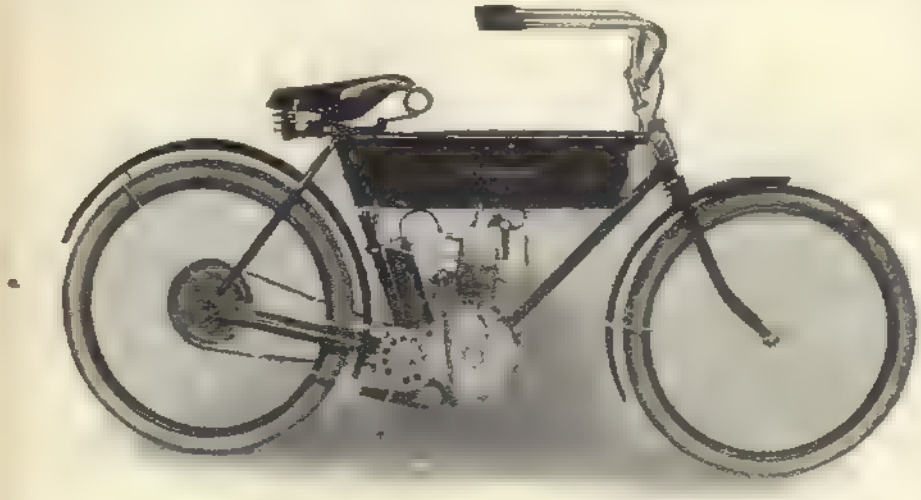
The Thor cylinder bore and stroke are the same, 120 mm., about 4 7-10 inches, and this motor, it is claimed, shows 60 B. H. P. at 1500 R. P. M. The weight, as shown, with fly-wheel and cone-clutch complete is 730 pounds. The ignition is by one set of jump spark plugs with both high tension magneto and battery current supply. The cylinders are cast in dual units with integral water jackets. The water circulation is by a centrifugal pump, driven from the cam shaft gear.

The cylinders are symmetrical, valves on both sides, all valves alike; the valves and stems are integral forgings, 35 per cent. nickel steel; valve faces 45 degrees angle; all ports 1 13-16 inches diameter.

The valve action is direct from two cam shafts, about 1 inch diameter. All dimensions here given are in inches, corresponding to English-inch translations to the metric dimensions used. The cams are integral with the cam shafts, and are finished with profile mills in an index fixture. There are two shapes of cams, one for the intake and one for the exhaust.

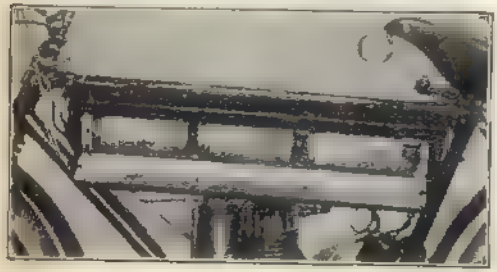
The "Triumph" Motor Cycle

The latest entrant into the field of motor cycle manufacturing is the Excelsior Automobile Supply Co., 1436 Michigan avenue, Chicago, Ill., whose extensive dealings in the cycle and automobile trade put them in a strong position not only for knowing the requirements of this trade, but for successfully marketing this new product, which is the result of their thoro knowledge and careful consideration of the necessary features of a practical and satisfactory motor cycle.



The "Triumph" Motor Cycle.

One of the most noticeable features of the "Triumph," as this motor cycle is called, is its low center of gravity and low riding position, which contribute to its steadiness as well as to the safety of the rider. Long wheel base is another good feature of the machine, the length being 53 inches. Long handlebars allow the rider to assume a comfortable, upright position and a large coil spring saddle further insures comfort. The saddle is low enough to allow both feet of the rider to touch the ground.



Tank on the "Triumph" Motor Cycle with side open, disclosing the dry cells in the battery compartment.

The frame is especially designed for rigidity, having an extra upper bar, carefully reinforced joints and specially strong engine supports and brackets. The cluster has a heavy pinch bolt.

Between the two horizontal upper bars of the frame is placed a combination tank with compartments for fuel, lubricating oil and ignition cells. The cells used are standard size, 2½x6 ins., and are contained in the left side of the tank, while the fuel and oil compartments, 6 and 1 quarts capacity, respectively, are on the right side. Large filler caps are provided, so that fuel and oil can be poured into their respective compartments without being spilt over the machine from using the large funnels usually found at supply stations.

The wheels have G & J new style rims, and are regularly fitted with 2¼-inch G & J, corrugated-tread, clincher tires, tho Bailey tread tires can be had at an extra cost, if desired. A Thor motor cycle brake is fitted.

The motor is the well-known Thor, 2¼-horse power, latest model. It is suspended from the lower parallel bar by the top of the cylinder, and the base is clampt, front and rear, to the frame. It is placed centrally in the frame in a vertical position to insure thoro and uniform lubrication, constant compression and hence maximum power. From a counter shaft to the rear wheel the drive is by a straight line chain, a Duckworth motor cycle chain being used. The Brown compensating sprocket is used, but, contrary to usual practice, is placed on the rear hub instead of on the countershaft, which placing, they claim, gives greater efficiency to the sprocket in absorbing jerks.

The ignition apparatus includes a Pittsfield special motor cycle coil, which is firmly secured to the seat mast tube by metal clips.

Lubrication is accomplished by means of a special sight feed, constant drip oiler, which assures a steady and uniform feed of oil.

A monster bicycle and motor cycle meet is being arranged for Stockton, Cal., to be held late this summer.

THE SUCCESS OF A SPARKING BATTERY

depends upon two features—the type of plate and the method of assembling. The elements of the "Exide" Sparking Battery are of the "Exide" type. The method and details of assembling are based upon experience with thousands of cells and are designed for strength and durability.

THE ELECTRIC STORAGE BATTERY CO.

PHILADELPHIA, PA.

SALES OFFICES: Fenton Building, Chicago, Arch and 9th Sts., New York, 30 Broadway, Boston, 69 State St., Chicago, Marquette Bldg., St. Louis, Washington Bldg., Kansas City, Long Bell Bldg., San Francisco, 11 Hawthorne St., Pittsburgh, Frick Bldg. Annex, Atlanta, Lanier Bldg., Cleveland, Perkins Bldg., Detroit, Penobscot Bldg., Toronto

Prices Reduced
Dunn Semi-Dry Cells

Standard Size No. 6 Now **40c.** Was 60c. and worth it.

Marine Batteries Water-Proofed Ready to Use

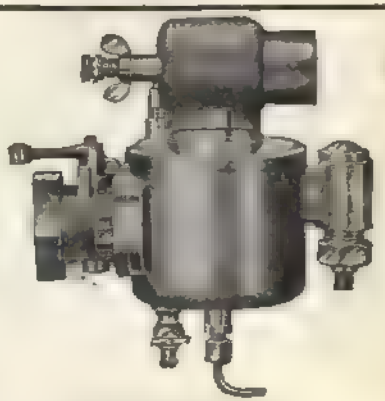
No. 66 for Jump Spark 6-Volt Coils $3.00 each

No. 86 for Make and Break Coils 3.75 each

Will furnish a full SEASON'S service Trade Discounts, etc., on application.

Geo. H. Terry Co., Sales Agents, 92 Chambers St., N.Y.C.
The Atlantic Co., 59 Haverhill St., Boston
The Fairbanks Co., 701 Arch St., Philadelphia

Manufactured only by
The Semi-Dry Battery Company, Harrison N. J. U. S. A.
Sole Manufacturers for Marine Torpedo Use



"Acorn" Carbureter

RELIABLE CARBURETER
ACORN "
ECLIPSE "
GENERATOR AND CHECK VALVES, PLUGS, ETC.

Write for Circular "D"

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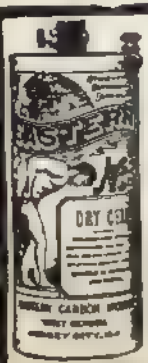
GEORGE H TERRY CO.
No. 92 Chambers St., New York City
Agents
MR. C. S. KNOWLES
No. 7 Arch Street, Boston, Mass.
New England Sales Agent



Eastern High Grade IGNITION CELLS

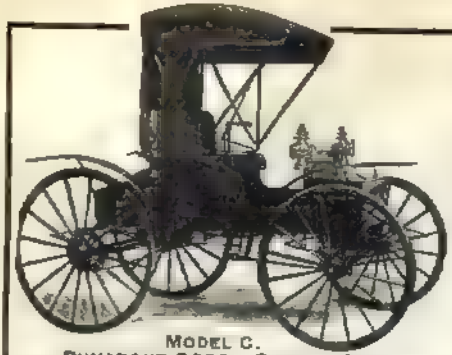
fill the place for something better than that which has been produced. More Voltage, Amperage, Life and Efficiency than all others.

EASTERN
Battery Connector

Positively Won't Shake Loose.

EASTERN CARBON WORKS
CARBON PLACE, JERSEY CITY, N.J.

Electrotypes Ready



MODEL C.
RUNABOUT $600. SURREY $700.
Prices include Top, Lamps and Full Tool Equipment.

The RELIABLE DAYTON

A practical car for every day use, city or country, winter and summer, good roads and bad—10-inch road clearance—2 cylinder, 25 horse power motor positive double chain drive Has no ropes, belts or pulleys. Solid tires eliminate tire troubles and reduce tire expense to the minimum point. Is of low first cost and low maintenance.

Full descriptive catalog on request.

Reliable Dayton Motor Car Co.

DEPT G 375 W. LAKE STREET,
CHICAGO, ILL., U. S. A.

The Elwell-Parker Electric Company of America

CLEVELAND, OHIO.

Designers and Builders of

Electric Vehicles, Cars and Wagons,

for

Passenger and Freight Purposes.

AUSTIN

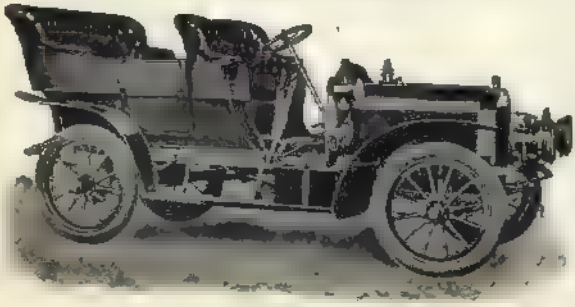
60 H. P. Touring Cars Runabouts Limousines **90 H. P.**

Perfect in All Mechanical Details.

We make more of the complete car in our own factory than any other American manufacturer. The axles, gears, steering knuckles and all vital parts are exceptionally large and strong, insuring lasting satisfactory service.

Send for catalogue giving full details of our many special and improved features.

Austin Automobile Co.,
Grand Rapids, Mich., U. S. A.



40 H. P. Four Cylinders.

PIERCE-RACINE

You will find in our Model D PIERCE-RACINE, the *Greatest* value ever offered in an Automobile. Modern and up-to-date in every particular; speedy, powerful on hills; noiseless in operation; extreme simplicity.

Send for our Illustrated and Descriptive Catalog

PIERCE ENGINE COMPANY
RACINE, WISCONSIN

New England
899 Boylston Street
Boston Mass.

Pacific Coast
1830 South Main St
Los Angeles, Cal

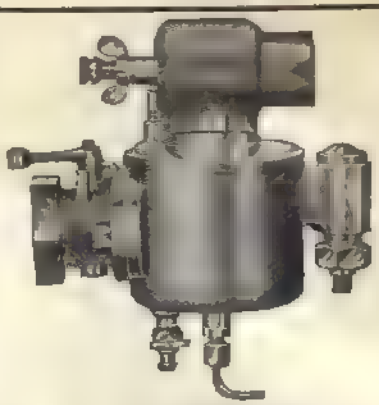
Crucible Steel CASTINGS

for

AUTOMOBILES

Solid—True to Pattern
Prompt Shipments

Crucible Steel Casting Co.
Lansdowne, Penna.

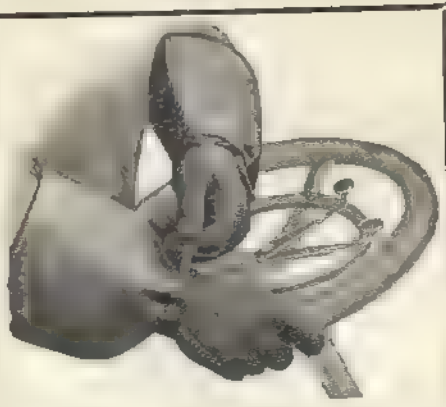


"Acorn" Carbureter

RELIABLE CARBURETER
ACORN "
ECLIPSE "
GENERATOR AND CHECK VALVES, PLUGS, ETC.
Write for Circular "D."

BAIRD-BANKS MFG. & SUPPLY COMPANY
35 WARREN STREET, NEW YORK CITY.

GEORGE H TERRY CO.
No. 92 Chambers St., New York City
Agents
MR. C. S. KNOWLES
No. 7 Arch Street, Boston, Mass.
New England Sales Agent



GRINNELL "RISTFIT" **Ventilated Glove**

(Patent Pending)

With Ventilated and Unventilated Backs

The perforated back keeps the hands cool, prevents perspiration, and gives elasticity to the gloves. Retail at $2.50 per pair up. Without perforated back, silk or wool lined, retail at $3.50 and up. Both styles made of "Reindeere" Leather, long famous in our Engineers' gloves for softness and durability. Black, tan, or drab colors. These gloves are "live wires when it comes to sales." ¶ Write for prices and samples to-day while you think of it.

MORRISON, McINTOSH & CO.
70 BROAD ST., GRINNELL, IOWA

PRESSED STEEL FRAMES

HIGH CARBON NICKLE
OR CHROME
NICKLE

Prompt Deliveries
Prices Right

Send Prints for Estimates

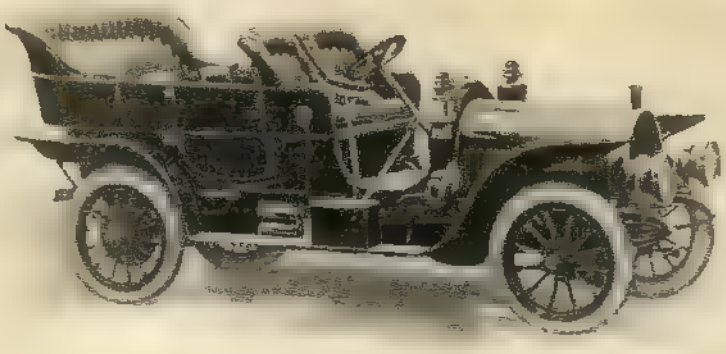
A. O. SMITH CO.
MILWAUKEE, WIS.

We are willing to rest our case on a thorough demonstration. Will you arrange for one? In the meantime, get our free Book.

THE AEROCAR COMPANY, Detroit, Mich.

MEMBER A. M. C. M. A.

Absolute Protection From Mud and Water



The Royal fenders are receiving much attention from those who desire comfort and cleanliness. It is absolutely impossible for mud, water, stones or other substances, thrown up by the wheels, to reach the car or its passengers, when protected by the Royal fenders.

Why does everybody say

"BUY A ROYAL TOURIST"

Ask an owner.

THE ROYAL MOTOR CAR CO.

Member A. L. A. M

CLEVELAND, OHIO

M. M. 1907

Instant Deliveries

Are what you should be getting at this late date, not promises.

We Are Making Instant Deliveries

To our Agents Hadn't you better place that order you have been keeping your customers waiting weeks for, where you can get

Instant Delivery

Of the best Motor Cycle ever sold, thereby saving your customers further delay and yourself a commission?

M. M., the machine that has more power, strength, stability, speed, endurance and ease of control than any other Motor Cycle built.

Write For Proposition

CHICAGO
WHIPPLE, The Motor Cycle Man
260 West Jackson Blvd.

NEW YORK CITY
GEO. P. JENKINS, 10 W 60th St.

DENVER
BROWN & BECK, 1737 Champa St.

SAN JOSE, CALIF.
A. C. BANTA & CO., 704 South 2nd St.

AMERICAN MOTOR COMPANY

715 CENTER STREET

Brockton **Mass.**

New Departure Goods to be Sold Direct

Beginning August 1, the product of the New Departure Manufacturing Company will be sold direct from the home office and salesrooms at Bristol, Conn. The salesmen of the company will travel from Bristol and all orders will be received at and invoiced from the factory.

John H. Graham & Co., of New York, still look after New York city and the down town export trade.

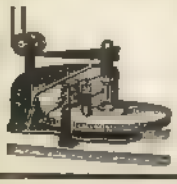
Mr. DeWitt Page, secretary of the company, will be at the head of the sales department. He retains management of the advertising department.

Automobile Wrenches!

LOOK NO FURTHER!

Write for prices and samples of the **Lightest, Strongest, most Serviceable, Tempered Steel Wrenches** ever designed. Address

ONWARD COMPANY,
Former y E. T. Harris
531 to 551 West 15th St., CHICAGO, ILL.



Clipper Sharpener and Surface Grinder
Profitable in Every Repair Shop
Clippers sharpened in 5 minutes, earning 50 cents. Descriptive circular and prices, address
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14-20 Orthodox St., Poughkeepsie, N. Y.

THE ORIGINAL.

THE SARTUS
Ball Retainer
(Brought Out in 1896)
BEST ANTI-FRICTION
THE SARTUS BALL BEARING CO.
155 Spring Street, NEW YORK CITY

Headquarters for Bicycle and Automobile
Lamps and Generators
AUTOMOBILE SUPPLIES
Hine-Watt Manufacturing Co.
58-60 Wabash Ave., Chicago, Ill.

The Reliance
Best Motor Cycle Proposition in the world :: :: ::
RELIANCE MOTOR CYCLE CO.
ADDISON, N. Y.

Mesinger "CAVALRY" Motor Saddle

Free action in front suspension spring

The top is raised in front and each by the rider from slipping forward or backward. It is well padded and has the form of a horseback saddle.

H. & F. MESINGER MFG. CO.
1801-1807 First Avenue New York, U. S. A.

CROUCH MOTORCYCLES
J. W. GRADY & CO.,
Selling Agents,
Worcester, - Mass.

MOTORCYCLE SIDE-CARS
Made to attach to Indian, M-M., Yale and Armac. Does away with that lonely feeling. Prevents falls in snow or mud.
Our stand may save that walk home.
Send for Circular.
R. W. GODDARD CO. Worcester, Mass.

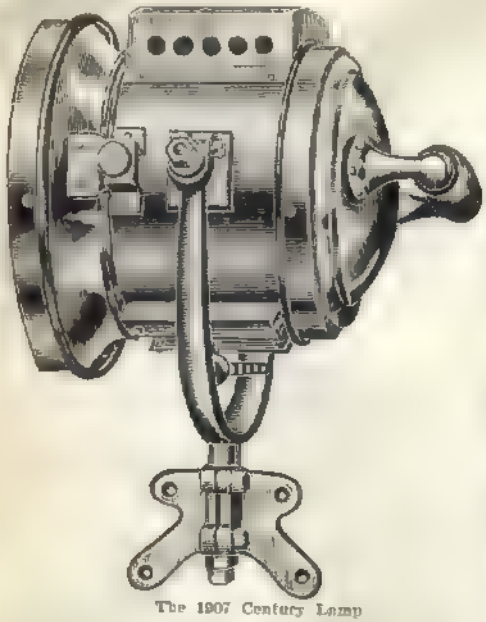
THE A. & J. MANUFACTURING CO.
Sole Manufacturers, **THE ORIGINAL A. & J. Repair Hanger and Braziron.**
The best cast iron brazing compound.
Special motor cycle bracket and hanger for builders.
26 W. Randolph St., Chicago, Ill.

BRADLEY MOTOR CYCLES
Single and Double Cylinder, $200 and $275
C. E. Bradley Motor Co.
268 Diamond St., Philadelphia, Pa.

BICYCLES AND BICYCLE SUPPLIES
Seldom Equalled
Never Excelled
Manufacturers' Supplies Co.
418 ARCH STREET, Philadelphia, Pa.

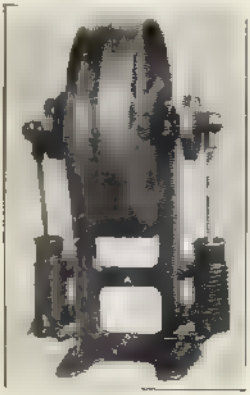
"Arnstein's" Cement, "Century" Lamps and "Star" Power Pump

Eugene Arnstein, [illegible] and Shields avenue, Chicago, Ill., manufactures Arnstein's Puncture Cement and is sole selling agent for the "Century" lamps and the "Star" power pumps.



The 1907 Century Lamp

Arnstein's Automobile Cement is manufactured from the finest Para Rubber, and is used for repairing punctures in inner tubes. It is claimed that with this cement the most inexperienced man can mend a punctured tube in ten minutes. It is put up in all sizes of tubes and cans.



Star "A" Air Pump Double Cylinder

Their line of Century lamps comprises an assortment of several different styles, the illustration given showing one of their popular designs for 1907. Century Lamps are equipt with Bausch & Lomb Mangin Mirror Reflectors, are made of heavy gauge brass and highly polished. They are made with adjustable burners, which enables one to focus the light to any desired point.

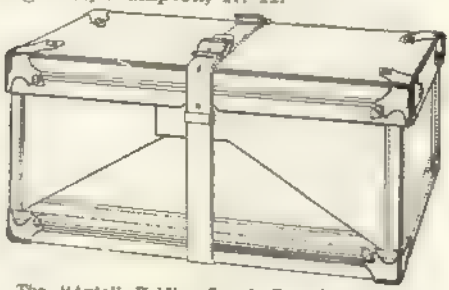
The Star Power Pumps are built with single and double cylinders. They are strongly built to withstand all kinds of hard usage, and their bearings can be tightened and taken up at any time. The crank pins are all hardened.

Star "B" pump is a single cylinder pump and is made like a gas engine, using two steel rings on the piston. Piston is ground to fit. The pump has a pumping capacity of 125 pounds at 125 revolutions per minute in an 80 gallon tank in 40 minutes. Cylinder is 2 7-16 and stroke 5 inches.

Star "A" Pump, which we illustrate, has two cylinders, 2 7-16 bore, with 5 stroke, and has a capacity of pumping up to 200 pounds pressure per hour in a tank of 120 gallons at 125 revolutions per minute. It is made like the Star "B" Pump, only has double the pressure.

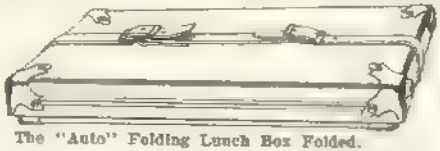
The "Auto" Folding Lunch Box

A handy and useful addition to the automobilist's outfit is the Auto Folding Lunch Box, manufactured by the Atlas Box Mfg. Co., Hampton, N. H.



The "Auto" Folding Lunch Box Open.

The large size box is 12 inches long, 8 inches wide and 7 inches high and will hold luncheon for six persons. It is made from the finest leather board, is strong and well braced. The sections are bound together with sheepskin hinges, which are guaranteed not to break or chafe thru. The cover and body of the box is fitted with nickeled



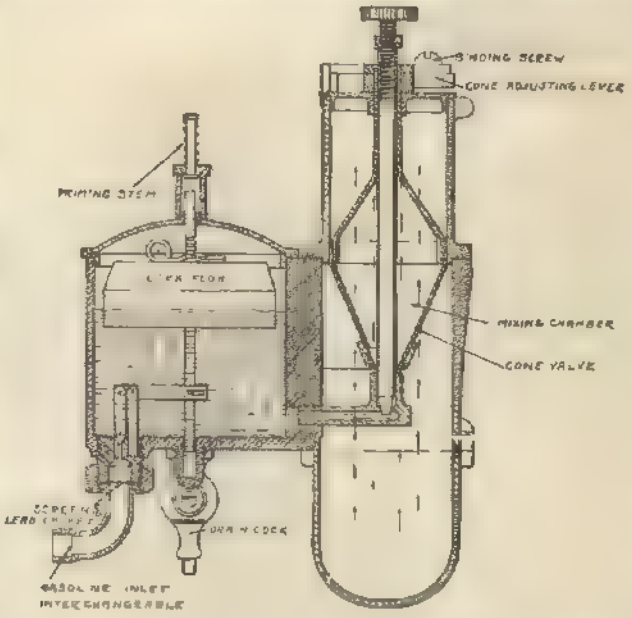
The "Auto" Folding Lunch Box Folded.

metal or solid brass corners which protect them from injury and further strengthen the box. The whole box is bound in with a strong adjustable leather strap. It is furnished in two colors, black and tan. The list price is $1 50.

An individual size is furnished for 50 cents.

The Diamond Rubber Company's New York stores, located at 1717 Broadway, and at 78 Reade street, was on May 1st consolidated into one fine large tire and mechanical goods establishment at 1876 Broadway, New York.

The 1908 Buffalo Carburetor



A mechanical carburetor in all that the term implies. Its movements are not left to chance, but it is positive in its action throughout its entire range, from zero to full opening. Atmospheric conditions do not alter its perfect working. Its construction throughout is based on the correct principles of carburetion.

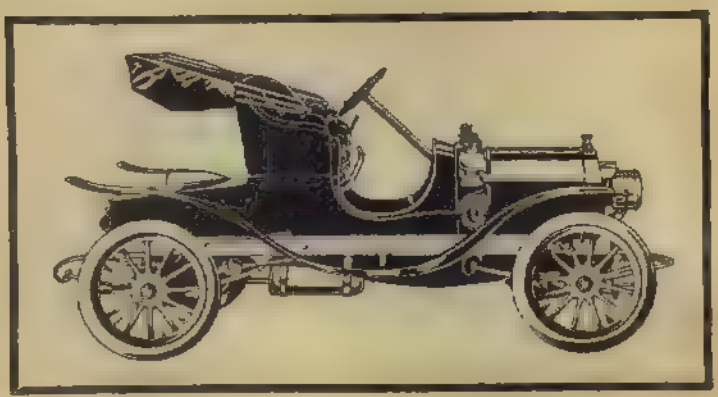
The entering column of air passes the gasoline nozzle at adjustable openings in the cone valve. The cone valve and the throttle are link connected and move in unison. Both are adjusted to give the proper mixture for slow speed. As increased power or speed is desired, the cone valve and throttle are rotated by the operator, increasing the quantity of mixture admitted, while the speed of the mixture passing the nozzles is kept the same. This feature insures a perfect mixture for all powers, prevents a greater quantity of fuel from being drawn by the motor than can be properly burned and accounts for the great economy obtained with a 1908 BUFFALO MECHANICAL CARBURETOR.

Skilled workmanship and high-grade materials only, enter into its construction. The leading American Motorcars, such as Ford, Corbin, Welch, Knox, Wayne, Jackson, Queen, Wolfe, etc., use the **Buffalo.** It was the equipment of the Ford car which broke the world's record in the recent 24-hour race at Detroit. If **you** try the 1908 "Buffalo" you will be convinced.

BUFFALO CARBURETOR CO.

889 Main Street **Buffalo, N. Y.**

Agents :: Speak Quick!



The Atlas

Famous 20hp. Runabout.
Rumble-Seat 30hp. Runabout.
Luxurious 40hp. Touring Car.

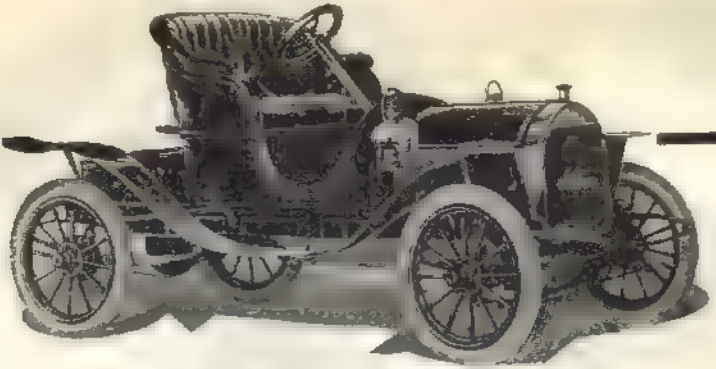
Equipped with the motor-marvel of the age, in units of 2, 3 and 4 cylinders.

These motors embody *absolutely all* the successful and desirable features of the best 4, 6, and 8 cylinder automobile engines, with ONLY ONE-TENTH as many moving parts.

All cars equipped with finest aluminum bodies.

Atlas Motor Car Co.,
Springfield, Mass.

HARRY A. KNOX, Pres.



"THE SIMPLEST AUTO EVER BUILT
AND THE MOST EFFECTIVE"

THE "ATLAS" RUNABOUT

THAT'S a strong claim, but the **facts** bear it out. 20 h.p., two cylinder, **two cycle** engine, of **only** 5 **Five) Moving Parts.** No adjustments, no breaking. **Business,** quick, sharp and thorough.

$1400

The Atlas Motor Car Co.

Harry A. Knox, President
SPRINGFIELD, MASS.

CRAWFORD

MODEL E., 35 H. P., $2500. *(Illustrated)*

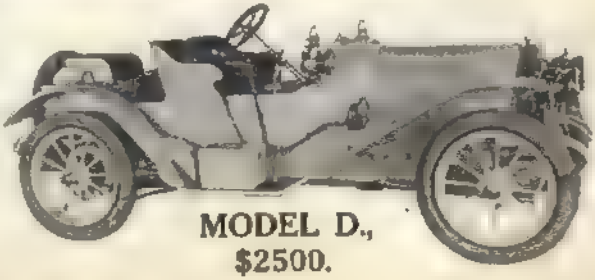
MODEL F., 50 H. P., $3000.

MODEL E is the leader of the Crawford line and an exceedingly good one, too. It is one of the best values on the market at the price, as you will be convinced after a careful examination of other cars at the same price

MODEL F is built on the same general lines, being slightly larger.

MODEL D—GENTLEMEN'S ROADSTER,—is a most attractive car in design and an exceedingly serviceable one. There is plenty of horsepower for all purposes.

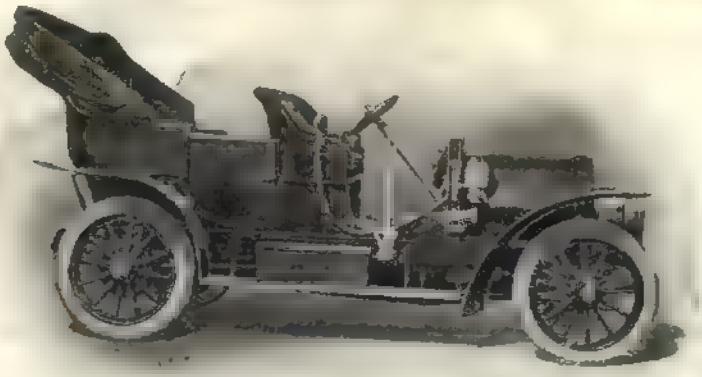
We can consider a few more agents.



MODEL D., $2500.

CRAWFORD AUTO CO.
Hagerstown, Md.

THE MOORE 40 H. P. CAR



Moore Touring Car with Victoria Top

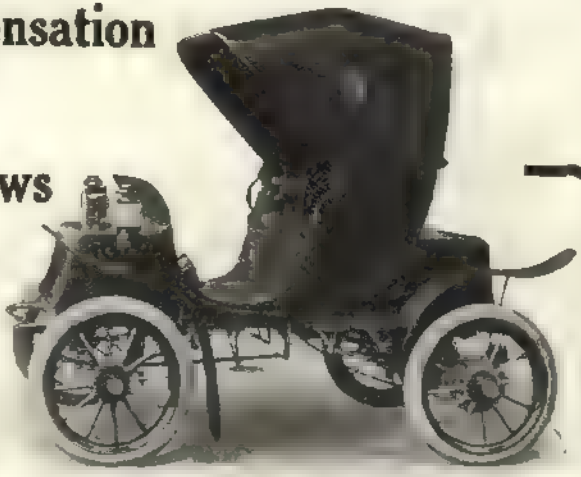
THE BALL BEARING CAR

The body is hinged at the back and can be lifted, giving access to all parts of the mechanism

MOORE AUTOMOBILE CO.

571 Fifth Avenue New York

The Greatest Sensation of all the Automobile Shows



The 1907 models are veritable triumphs. Chaste—dignified—refined—an always evident superiority. A demonstration of engineering skill and manufacture that differentiates between Carriages made to serve and things made to sell.

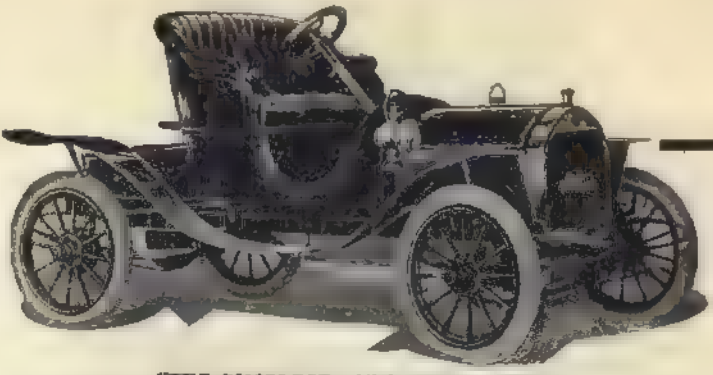
An analytical examination of Baker construction reveals mineralogical science in the selection of materials used in various parts; and a comprehensive classifying according to use and wear—the greatest of all guarantees for service

BAKER ELECTRICS

have attained an eminence in the craft that others have found impossible to reach. The Baker Carriages at all the shows have fairly monopolized attention and admiration — There were more Bakers sold at the shows than of any other Electric Carriage. There must be a reason for this. It is found in the easily demonstrated superiority of the Baker—durability—finish—and riding qualities. Better motor, better controller, better service of the battery

Read the catalog as to mileage We will not over-rate or over-state.

THE BAKER MOTOR VEHICLE CO. 18-80th Street N. W. CLEVELAND, OHIO



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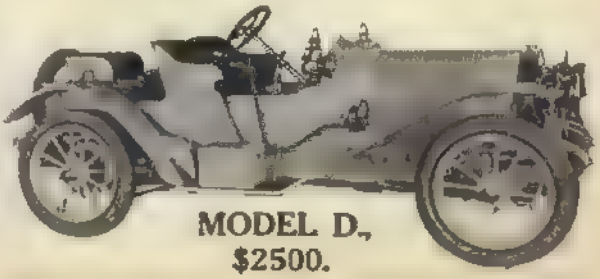

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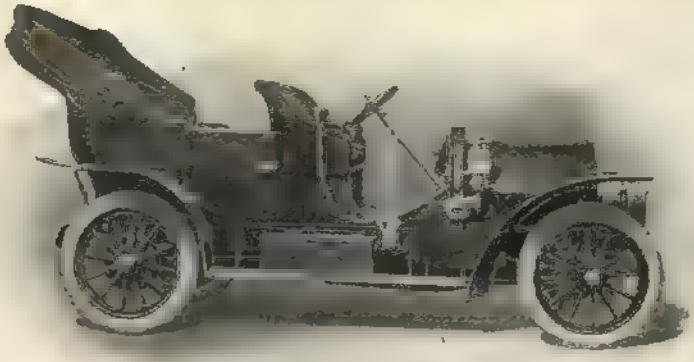

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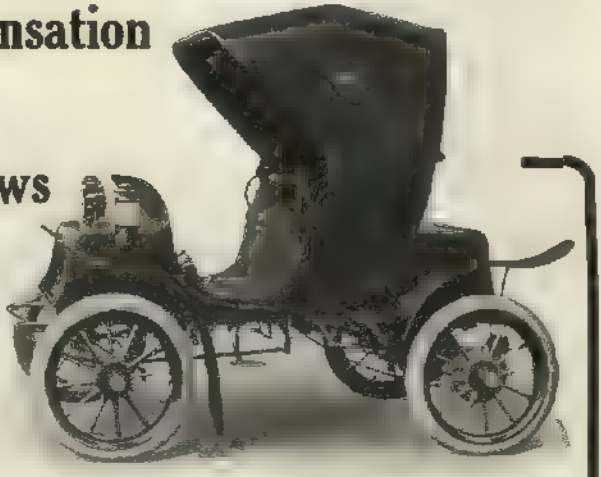

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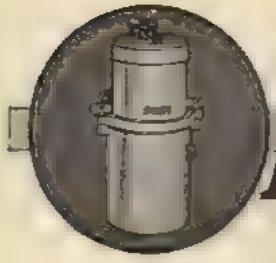
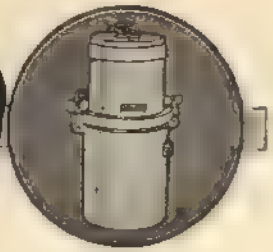


ATWOOD



QUALITY LAMPS

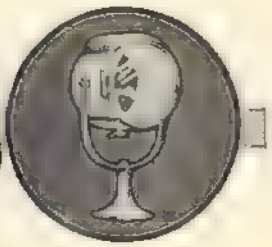
Skill in the building, care in selection of material, and practicability as well as beauty in designs have made the Atwood Lamps and Generators the foremost product of their kind in the world. Constant improvements, the most severe tests upon completion, and careful and minute inspection through every process of construction have conserved the reputation for quality so consistently earned during 35 years in the building of lamps.

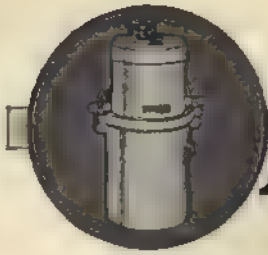
Write for Catalogue

ATWOOD MANUFACTURING CO.
Amesbury, Mass.

We exhibit at Madison Square Garden, Nov. 2nd to 9th.

LAMPS





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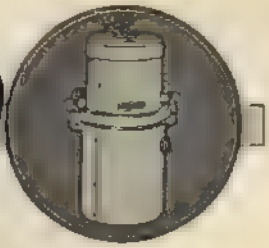
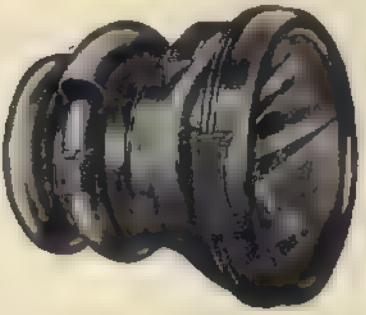


MORE POWERFUL MORE EFFICIENT MORE RELIABLE

Than Any Automobile Lamp on the Market

Mechanically perfect, elegant in appearance, simplicity in construction, and the best material procurable are the basic principles of all the Atwood product, and supplemented by a perfect factory organization.

Gas tanks are becoming more unpopular every day, for the reason that they readily get out of order. The Atwood Seamless Generator eliminates lighting trouble of all kinds, and is absolutely reliable under all conditions. It is always ready for instant service. This generator is round, seamless drawn of extra heavy gauge brass; no seams to break; no solder to come apart; practically indestructible. It has given absolute satisfaction under all conditions and tests. *Experts—men who know pronounce it the simplest and most practical generator made.*



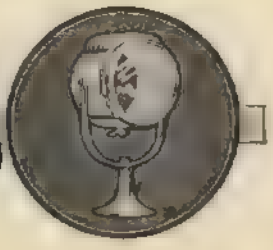
"ATWOOD"

Stamped on a Lamp or Generator means a Guarantee of Perfection.

ATWOOD MANUFACTURING CO.

AMESBURY, MASS.

LAMPS



Manufacturing Company's product

whether

Gas Lamps—Oil Lamps—Generators

are the

Highest grade made in America.
There is nothing better at any price.

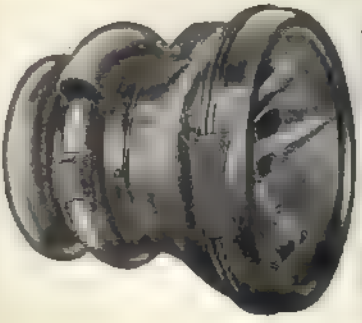
Strength in construction is the key-note of successful lamp building. Atwood Lamps are built of the BEST material procurable, are stylish and graceful and aristocratic in appearance.

Lamp difficulties and troubles eliminated by using

Atwood Seamless Generator No. 42

Has no wick. Water feed kept perfectly uniform with the Atwood Water Valve. Does away with annoyances and constant adjustment; is unquestionably the

Best Generator in the World



ATWOOD

Quality the highest.
Prices moderate for the highest grade of Goods.

Immediate Deliveries Guaranteed, because of unequalled manufacturing facilities, this company having one of the largest plants devoted to the manufacture of automobile lamp equipment.

ATWOOD MANUFACTURING COMPANY
AMESBURY, MASS.

Manufacturing Company's product

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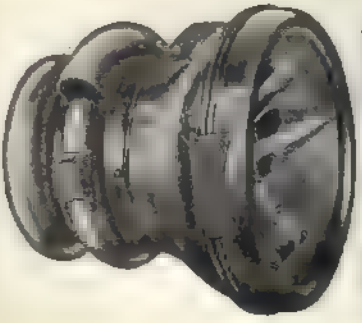

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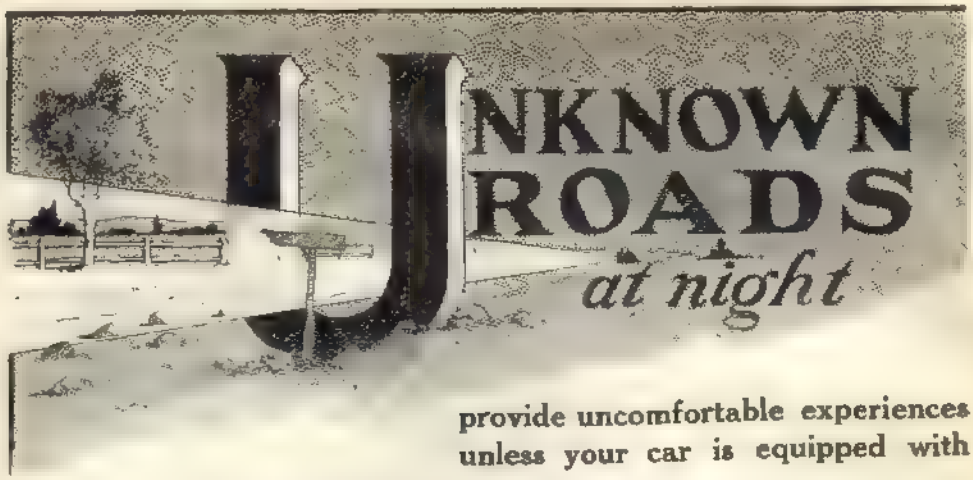
ATWOOD MANUFACTURING COMPANY
AMESBURY, MASS.



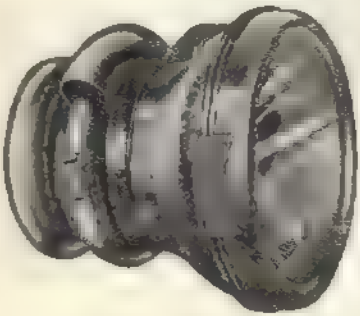
provide uncomfortable experiences unless your car is equipped with

ATWOOD LAMPS

The Atwood Lamp has always been the best Automobile Lamp.
It is the best on the market to-day.
It shall always remain the best.

Thirty-five years of cumulative experience, and conscientious attention to every detail of manufacture; an immense plant provided with every modern facility, and progressive methods have gained for the "Atwood" a reputation for

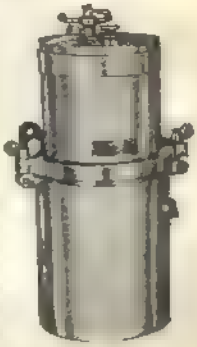
AUTOMOBILE LAMP SUPREMACY



New conditions and styles have arisen in the automobile field during the past decade, but ATWOOD QUALITY has remained unchanged;

The Atwood No. 42 generator is without question the most popular generator on the market to-day.

It is made of seamless heavy gauge brass. Cannot leak. Cannot come apart. Is easy to attach to any car. It has a water jacket; the carbide basket has a grate; the water feed is positive and automatic. A distinct, decided improvement over the earlier generator in general use.



ATWOOD

FOR

Economy, Quality, Service

Write for catalog.

ATWOOD MANUFACTURING COMPANY
AMESBURY, MASS.

The Victor Hand Forged Automobile

Victor Motor Car Mfg. Co., 171 Carroll street, St. Louis, Mo., have lately placed on the market a buggy type motor car designed to suit the man of moderate means in regards to price and to suit any one, rich or poor, in efficiency, durability and low operative expense. The manufacturers of this car have had several years' experience with manufacturers of high-grade cars, but

The Victor Hand Forged Automobile.

have formed the Victor Company for the purpose of putting into concrete form their ideas as to what a practical, sensible motor car should be. They have aimed to obtain great strength with moderate weight and simplicity of construction.

The motor is of the two-cycle type and consists of a single 4½x4 water-cooled cylinder. It is rated at 6 H. P., but is said to be capable of developing 7½ H. P. The cylinder, piston and rings are all of the highest grade air furnace cylinder iron The cylinder is ground to a perfect fit. Four rings, of the eccentric type, are fitted to the piston The crank shaft and connecting rod are forged steel, given a special heat treatment to obtain high tensile strength and stiffness. Every dimension is ground to gage. The piston head is peculiarly shaped to insure thoro exhaust and prevent mixture of the new charge of gas with the burned charge escaping.

Jump spark ignition is employed. The carburetor is of the float feed type. Spark and throttle are both controlled from levers on the front of the seat.

Transmission is of the friction type, giving any speed from zero to maximum, 25 miles per hour A single lever is used for obtaining all speeds and for brake on the reverse, which is powerful and effective.

Sarven patent wheels, 37 inches in diameter, are used, shod with 1¼-inch Goodyear cushion tires. The frame is of angle steel. The rear axle is live and carries the differential. The front axle is of 1¼-inch steel and fitted with heavy steering knuckles. Drive is by a 1x½-inch steel roller chain. The wheel gage is 4 feet 8 inches or 5 feet 1 inch, as ordered. Body is 30x68 inches, and the seat is 34 inches wide. It is finisht in jet black, with the running gear in Brewster green. The machine weighs about 800 pounds and lists at $450, including leather top, tires, 2 brass oil lamps, brass horn and tools. Besides a card of instructions, the manufacturers give a copy of Brooks' Automobile Hand Book to each purchaser of a Victor car.

The Carriage-Mobile, with Cylinderless Motor

The accompanying cut shows a Carriage Mobile equipt with a 10 h. p. cylinderless motor, the product of the Summit Carriage-Mobile Co., 407 Sycamore St., Waterloo, Iowa. This motor is a radical departure from usual practice in that it is claimed to be a cylinderless, self-cooling motor, requiring the use of no water or other cooling mixtures.

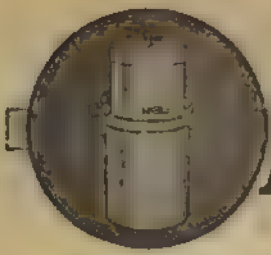
The motor is constructed without a cylinder. The piston is hollow, 5¼ inch diameter with a 5-inch stroke. It has a head at one end, the other end being cast solid. The intake and exhaust are placed in the head of the piston. The rings are also placed in the head of the piston, which is securely fastened to the engine frame. The connecting rod is connected to the outside of the piston by a wrist pin, and also to the crank pin, the same as in a steam engine. The piston runs in guides the same as a crosshead of a locomotive. The valves are me-

The Carriage-Mobile; equipt with a 10-horse power cylinderless engine.

chanically operated. No packing whatever is used. The engines are made with single piston giving 10 h. p.; double piston, 20 h. p.; triple piston, 30 h. p., and up to any horse power desired.

The manufacturers install these engines in all classes of carriages and vehicles, except the phaeton, or a platform spring wagon where the platform spring is in front, in which case they cannot attach their steering device. They build Carriage-Mobiles in three types, Runabout, Surrey and Farmer-Mobile, all equipt with the cylinderless motors and furnish their cylinderless engines separately, if desired.

The H. H. Franklin Mfg. Co., of Syracuse, N. Y., have secured the services of Mr. J. E. Doane as local salesman at Syracuse.



ATWOOD

QUALITY LAMPS

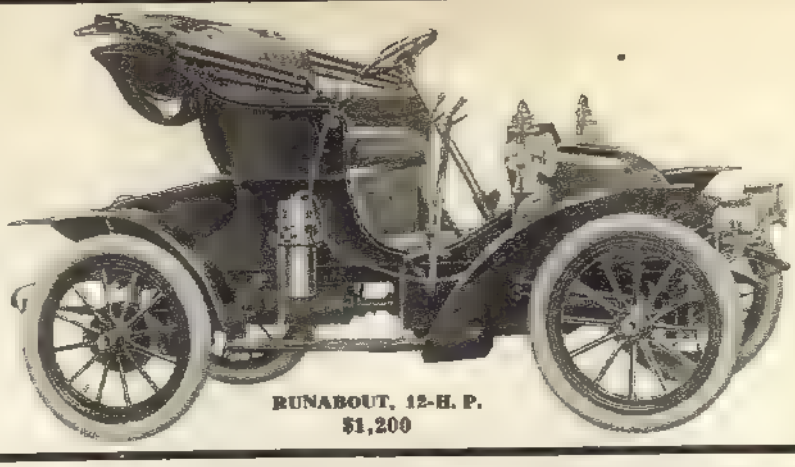
Skill in the building, care in selection of material, and practicability as well as beauty in designs have made the Atwood Lamps and Generators the foremost product of their kind in the world. Constant improvements, the most severe tests upon completion, and careful and minute inspection through every process of construction have conserved the reputation for quality so consistently earned during 35 years in the building of lamps.

Write for Catalogue

ATWOOD MANUFACTURING CO.
Amesbury, Mass.

LAMPS

The Autocar

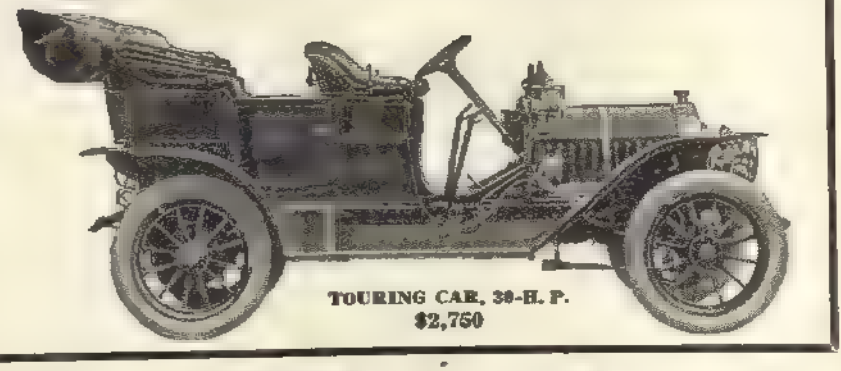


RUNABOUT, 12-H. P.
$1,200

THE 1908 AUTOCAR PRODUCT IS READY FOR IMMEDIATE DELIVERIES

RUNABOUT, Fully Equipped, Lamps and Top,	12 H. P.	$1,200
TOURING CAR, - - - - - -	30 H. P.	$2,750
LIMOUSINE, - - - - - -	30 H. P.	$3,750
ROADSTER, Fully Equipped, - - -	30 H. P.	$2,750

Write For Autocar "Life" "All About Autocar Doings, and The 1908 Autocar Book, Illustrated in Colors.



TOURING CAR, 30-H. P.
$2,750

THE AUTOCAR CO., Ardmore, Pa.

Member A. L. A. M.

The Autocar

Performances that prove Reliability

First in 24 hour endurance race at Point Breeze Track, Philadelphia. Ten contestants.
First in Philadelphia-Harrisburg Endurance Run, 220 miles, Jan. 1 and 2.
New record over sandy roads, Savannah to Augusta, 132 miles, May 17.
Perfect score, Endurance run of New Jersey Motor Club, May 30-31 and June 1.

These were true tests of Reliability—and The Autocar triumphed.

Type XIV, Autocar touring-car, 30 horse-power—$3000.
Type XV, Autocar runabout, 12 horse-power—$1200.

The Autocar Company
12th St., Ardmore Pa
Member A. L. A. M.
All Autocars sold with standard warranty of N. A. A. M.

Write for The Autocar Book

WITHOUT A DOUBT

Other things being equal, you certainly prefer a car, which **Starts Without Cranking.**

The Triumph

Self Starting Car is the outgrowth of years of experience, and embodies in its construction the three cardinal virtues

Reliability—Durability—Comfort

It is the only car equipped with a Self-Starting Motor, and is so simple that any lady may drive it without the attendance of a chauffeur.
There is nothing to watch, nothing to get out of order. You simply

"Push the lever and the motor starts"

THE TRIUMPH Car is built in two styles:

Model A-30 H. P. 4-cylinder Runabout, $2800.00.
Model C-30 H. P. 4-cylinder Touring Car, $3000.00.

TRIUMPH MOTOR CAR CO., Dept. F., Chicago, Ill.

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The Autocar Company
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Write for The Autocar Book

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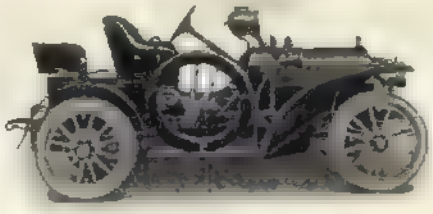

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There is nothing to watch, nothing to get out of order You simply

"Push the lever and the motor starts"

THE TRIUMPH Car is built in two styles:

Model A-30 H. P. 4-cylinder Runabout, $2600.00.
Model C-30 H. P. 4-cylinder Touring Car, $3000.00.

TRIUMPH MOTOR CAR CO., Dept. F., Chicago, Ill.

AUTOMOBILE AND BICYCLE SUNDRIES

New Stock, Prompt Deliveries and Interesting Prices

is a combination hard to beat. That is whywe are leaders in our line.

Get both our Bicycle and Automobile catalogs. They contain lots of interesting information.

We also carry a complete line of Motor Cycle parts and accessories.

In addition to the full line of sundries we carry in stock we are Sales Agents and Distributers for Philadelphia and Eastern Pennsylvania for:

Weed Chains, Witherbee Batteries, Mossberg Plugs and Specialties, Adwear and Boston Non-Skidding Tires, Rushmore and Ham Lamps, Standard Jacks, Continental Inner Tubes and St. John Tires.

GEO. W. NOCK CO., Inc.

126 N. Fourth St.

PHILADELPHIA, PA.

Jobbers Manufacturers Importers

Years of experience has enabled us to make horns far better than domestic or imported ones.

We refer to 46 Automobile Manufacturers

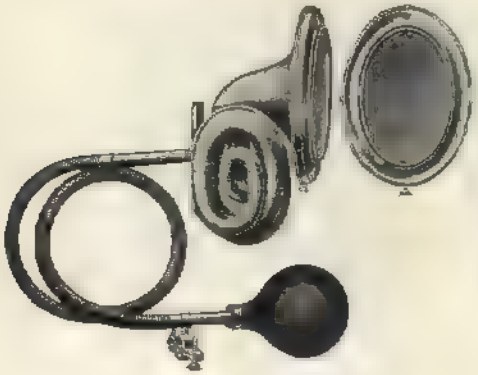
and to all the leading jobbers in the line.

Success is due to the absolute perfection of our horns for tone and quality.

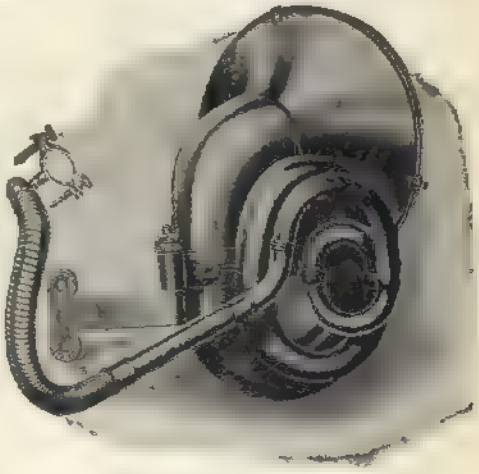
Nothing Better on the Market

"Beware of cheap imitations." *Get the best.*

Send for general catalogue and for list of Auto-makers that have used our horns.

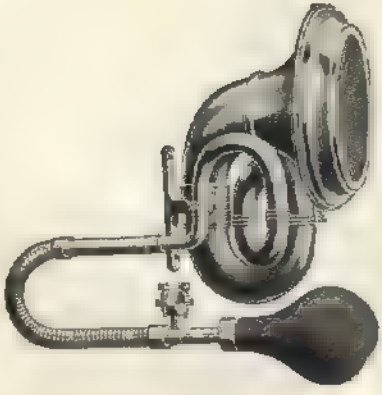


Large Oval Triple Twisted



Large Dragon Triple Twisted Swivel—Bracket

TEN NEW STYLES OF HORNS



The French Style Oval 7 in. bell and 8¼ in. bell

Dragon Horn with lyre bracket, 6½-7¾-8½ in. bell

AUTOMOBILE SUPPLY MFG. CO.

139 to 147 Emerson Place, Brooklyn, N. Y

Rear view of car fitted with the new Brown Dust Guard. Note that dust does not rise as high as the top of the rear seat back.

New "Brown" Dust Guard

William Hiram Brown, Lennox Bldg., Cleveland, Ohio, has lately brought out an improved form of the Brown Dust Guard. This new Brown Guard consists chiefly of a sheet of water-proof cloth and a pair of rods, upper and lower, on which it slides like a sash curtain.

The new Brown Dust Guard fitted to rear of car

The bent irons are bolted to the top sockets and the straight irons to the bottom of the seat extending sidewise. The guard is attached to these with straps. The guard hangs loose when the car is standing, but when the car is in motion it fills like a sail and is carried outward and rearward into working position. A wire frame may be used with it to always hold the guard in this position, as is shown on one of the cuts herewith, but for efficiency this is unnecessary.

Rear view of a car not fitted with the Brown Dust Guard, but going at the same speed over the same road as the one shown herewith fitted with one of these guards.

For carrying with luggage the guard may be rolled up, in which shape it is about 3 inches in diameter and 14 inches long over all.

The A. S. M. Co.'s New Oval Horn

A new type of oval horn has recently been brought out by the Automobile Supply Mfg. Co., 136, Emerson Place, Brooklyn, N. Y., which they claim possesses a very rich and penetrating tone. The horn is made very

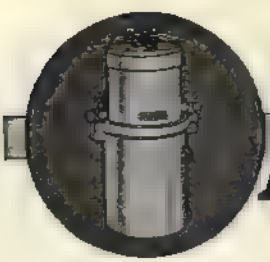
The Automobile Supply Mfg. Co.'s New Style of Oval Horn.

compactly so as to take up very little space. A new type of metal reed is used which they claim will not corrode nor lose its tone producing qualities. This company's horns are now used by 46 automobile makers.

An addition five stories high is being built to the plant of the H. H. Franklin Mfg. Co.

The Bartholomew Company, of Peoria, Ill., inform us that for 1908 they expect to continue their model G car without change.

The Taunton Motor and Machine Co., 24 Merchants Lane, Taunton, Mass., are manufacturing gas and gasoline engines of the four-cycle type, both water and air-cooled from one to twenty horse-power.



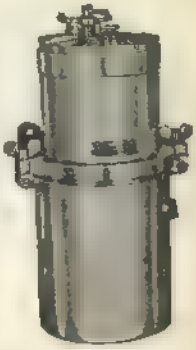
ATWOOD

Quality Lamps

Are mechanically perfect and are built of the best material procurable. There is no better or efficient lamp on the market at any price. Their excellence in construction backed by the Atwood guarantee means a greater beam of light; means less trouble; means economy—less cost for "up-keep"; means unequaled service.

Square lamps will be greatly in evidence during the year 1908. Atwood square lamps will lead as usual, in dignity, beauty in design and strength in construction.

The Best Generator in the World.



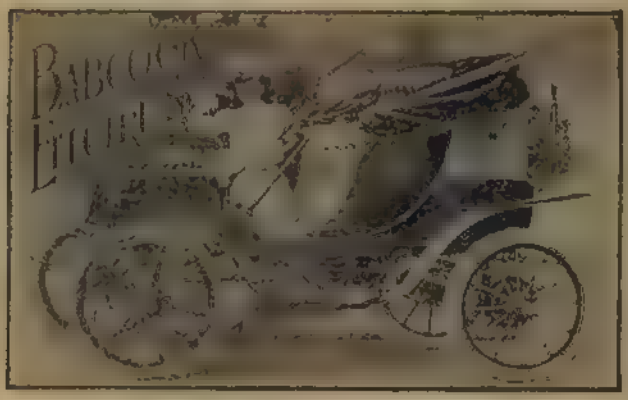
The Atwood No. 42 Generator is acknowledged to be the best generator in use to-day. It is found on every car whose owner desires high-grade, efficient equipment. It has no wick, is simple in construction, and the regulation of the water-feed is uniform when controlled by the **Atwood** water valve. This generator is round and seamless and is made of heavy gauge brass. It cannot leak; cannot come apart and is easy to attach to any car. It has a water jacket; the carbide basket has a grate; the water-feed is positive and automatic. A decided improvement from every standpoint over the early generators now in general use.

Write for catalog.

ATWOOD MANUFACTURING COMPANY
Amesbury, Mass.

ECONOMY——QUALITY——EFFICIENCY

ABSENCE OF REPAIR BILLS



Model 6 Victoria, Price $1700

Makes Auto Owners Happy. Owners of

BABCOCK ELECTRICS

are happy because they have no repair bills.

The Maximum Amount of Service for a Minimum Expense is obtained from

BABCOCK ELECTRICS

A Necessity to a Business Man. A Source of Pleasure to a Woman

FIVE MODELS. SEND FOR CATALOGUE.

BABCOCK ELECTRIC CARRIAGE CO., BUILDERS, 238 West Utica St., Buffalo, N. Y.

New York Branch, 1591 Broadway, cor 48th St.

Gaeth Catalog for 1908 Now Ready

It illustrates and tells about the new model of the car that made a perfect mechanical score in the Glidden Tour—the ONLY ONE to make a perfect score in the Cleveland Reliability Contest and many notable performances in other events during 1907.

It describes our wonderfully simple and effective low tension ignition system, the most perfect make-and-break device ever produced.

It describes our mechanically operated carburetor, enabling you readily to understand why Gaeth fuel consumption as well as carburetor troubles are reduced to a minimum.

It describes our thermo syphon cooling system (without pump) the most perfect known.

It describes the Gaeth transmission including our contracting band clutch, permitting regulation in an instant by one adjustment.

It Does Not Describe

a number of other features, such as the Gaeth springs, which cost four times as much as the ordinary kind and which we guarantee against breakage for a year.

It cannot give you any adequate idea of the superb quality of Gaeth construction, upholstery and finish, but when you digest the contents of this Catalog you will realize that if our statements are true the Gaeth is a car without a peer at its price—and—

We Guarantee Every Claim We Make

We want just a few hustling agents. Write us today.

The GAETH AUTOMOBILE CO., Cleveland, Ohio

New York Agents The Alborak Auto Co., 1783 Broadway

See Exhibit at Chicago Show

MODEL 6 VICTORIA. PRICE $1700.

Utility. No Fad.

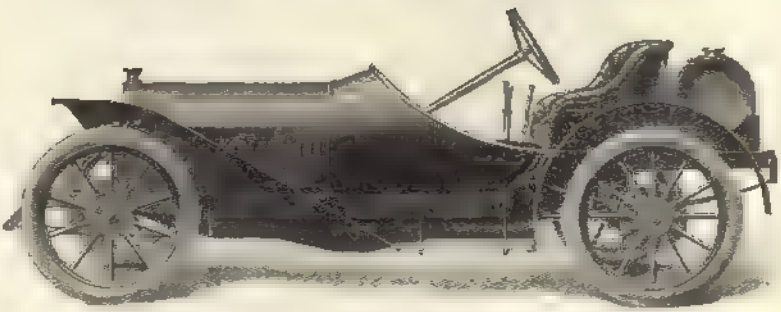
That's the characteristic of the Babcock Electrics.
Unequalled for use in City and Suburbs.
World's Record for Mileage on one charge of Battery Held by a Babcock.
"When you build right, IT IS right and works right."

Five Models. Send for Babcock Catalogue.

BABCOCK ELECTRIC CARRIAGE CO. BUILDERS, - West Utica St., Buffalo, N. Y.

DRAGON

1908 Roadster, 35 H. P., $1850



Exhibited at the Independent Show, Grand Central Palace, New York City, October 24 to 31.

Four 4½ x 4½ inch cylinders, cast in pairs, valves on one side, progressive type transmission, located on rear axle, 1 inch drop forged front axle, roller bearing rear axle, 90 inch wheel base, drop frame, pressed steel, storage battery ignition, speed up to 55 miles an hour, weight 800 lbs, cone clutch, leather faced, brakes, 14 inch drum, metal to metal internal and external, ball bearing front axle, spiral gear boxes. Dimensions 82 x 34½ inches. The price includes full equipment of five lamps, horn and tools.

THE DRAGON TOURING CAR OF 1908

The success of our 1907 touring car has induced us to put a similar model on the market for 1908, embodying all the good features of the 1907 car, together with such improvements and refinements as have been found desirable and necessary. It has all the advantages of correct design, fine workmanship, absolutely best materials, handsome appearance and perfect performance on the roads. Five passenger, 24-28 h. p., $2100, f. o. b., Philadelphia. Write for information.

THE DRAGON AUTOMOBILE CO., 30th, 31st and Chestnut Streets, Philadelphia.

Member A. M. C. M. A.

AMERICAN MORS

A CAR BUILT FOR PERMANENCE

The engine, chassis and every vital part of the American Mors is an exact duplicate of its famous French licenser.

Built by the largest builders of street cars in the world and backed by this unusual combination of French and American brains, the American Mors is conceded to be a triumph of structural solidity and a perfectly balanced car.

GUARANTEED FOR ONE YEAR

American Mors Touring Cars—Three Types

14-18 H. P., $3,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All Bodies of the Most Perfect Designs—Complete Equipment

Send for our Catalog. Address Dept. D

THE ST. LOUIS CAR COMPANY, Automobile Department, St. Louis, Mo.

NEW YORK: 1706-1718 Broadway, cor. 54th Street

Licensed by the Société Anonyme d'Electricité et d'Automobiles, "MORS," Paris, France

BUILT BY THE

LARGEST BUILDERS OF STREET CARS IN THE WORLD

TESTING

a MORA in a country where hills and rough roads abound is not responsible for every MORA being MECHANICALLY RIGHT.

¶ It must be MECHANICALLY RIGHT to stand the test.

¶ YOU WIN if before purchase you examine mechanical construction.

¶ YOU LOSE if you decide on purchase from exterior appearance alone.

DID YOU SEE THE

Mora Tourer Six

Mora Racytype Six

SEC. D., A. C. A. SHOW?

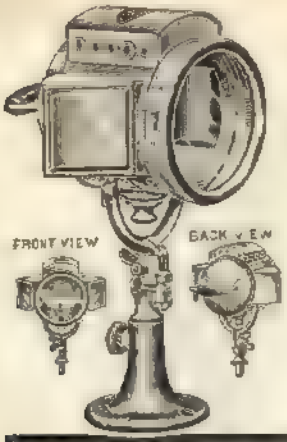
Mora

MECHANICALLY RIGHT

The Sealed Bonnet Hero was the hit of the N. Y. Show. Write for Catalog

Mora Motor Car Company

17 Mora Place Newark, New York, U. S. A.



20th Century "BABY GRANDS"

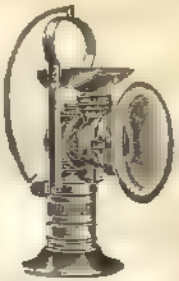
combination
Head, Port and Starboard Lights
Authorized by marine laws on

BOATS

up to 10 tons.
2 Sizes—4 & 6 inch.
Finest ground Mangin Lens Reflectors
The small size 4 in.—without side lights becoming very popular as

Motor Cycle Searchlight

Send for special literature.
Consult 20th Century Catalogue
20th Century Mfg Co., 19 Warren St., N.Y.



20th C. No. 12 Acetylene Hand Lantern

HEADLIGHT

with red and green side Jewels
for small Boats as

CANOES, Barges, &c.

Reliable quick service light

DEALERS AND GARAGES

Our large stock enables us to make prompt shipments. This is very essential to your business at this time of the year—and our prices are unusually interesting. Better get *our* catalogue and price list.

THE AUTOLIGHT AND MOTOR SUPPLY CO.

INCORPORATED

506-8 North Broad Street **Philadelphia**

AMERICAN

1907 COILS, PLUGS, TIMERS, ETC.

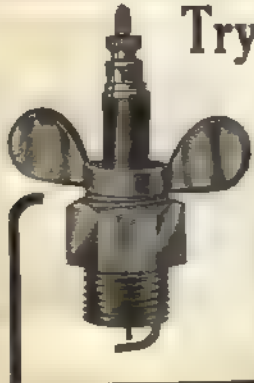
will remedy your ignition troubles

American Indestructible Mica Cadillac Cores, $1.00 per pair.

1907 American Indestructible Spark Plug

Recognized the world over for its superior qualities It is practically Soot Proof and lasts indefinitely For Efficiency and Durability our 1907 line of Coils has no equal They are fitted with an extremely fast vibrator and embody a special form of insulation, which cannot be punctured under any conditions. We make all styles including the **UNIT DASH TYPE.** You should also investigate our new 1907 Timer and other ignition specialties. Write for catalog.

American Coil Co., Foxboro, Mass.



Try this Spark Plug—thirty days—

at our risk—two plugs for the price of one

Let it prove itself on your own car. If you want a plug that is positively interchangeable—no gaskets, no packing every core ready to drop into position without adjustment one that centers every time—needs no wrench nor tools, use a

CHARTER PLUG "No tools but your fingers"

The core a double insulated mica The joints are BEVELED, GROUND like a VALVE and FIT into the base FIRM and RIGID No matter how often you remove your core it will always be in same Core can be reground to clean or replace by simply loosening the THUMB NUT with our FINGERS Charter Plugs are made in standard sleeves and will fit nearly EVERY car interchangeable Price $2.00 each Try one 5 days—if it is not what we claim send it back and your money will be refunded instantly

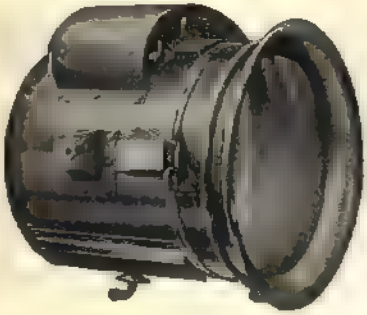
Special Free Offer—To demonstrate the ease and economy of renewing plugs, we will give you free for a limited time, one extra core for each plug ordered This offer is made to your plugs Send your orders NOW to get the extra cores free

CHARTER & CO., 313 Dearborn St., Chicago, Ill.

Peter Gray & Sons

MANUFACTURERS
HIGHEST QUALITY

Gas Headlights and Searchlights



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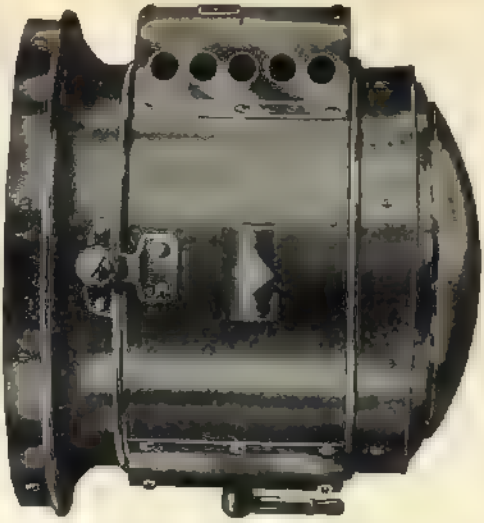
90 UNION STREET
BOSTON

"E & J" LAMPS



Seldom Equalled, Never Excelled.
WHY? Because we produce more light, use better quality material, constructed by mechanics of many years' experience.
Pay you to investigate.
Catalog on Request

EDMUNDS & JONES MFG. CO.
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BOSTON BRANCH, 38 Columbus Ave., Boston.

The NEW "ROCHE" SPARK PLUG

For Motorcycles and Automobiles. *The Best Yet*

Guaranteed for one year. A new plug furnisht free for everyone that fails to stand the racket.

PRICE, $1.50

The PERFECTED STORAGE BATTERY

For Automobile Use. *A "Trouble-Proof" Battery*

Easily charged. Will last for years. Supplied in highly polished oak boxes, tightly sealed, with rubber carrying straps. *Write for prices and particulars.*

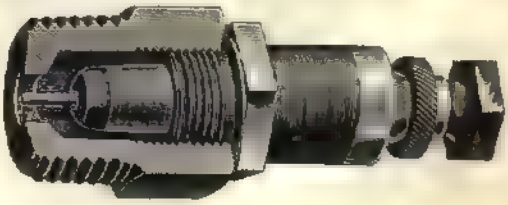
WM. ROCHE DRY BATTERY CO.
N. W. Cor. Park Place and W. Broadway, NEW YORK CITY

COMET

Is an indestructible Mica Spark Plug. The strongest made. The Manufacturers Plug. Best Insulation of any Spark Plug. Nothing to break. Closed End and Open End. Price regular sizes, $1.50

SOOTLESS

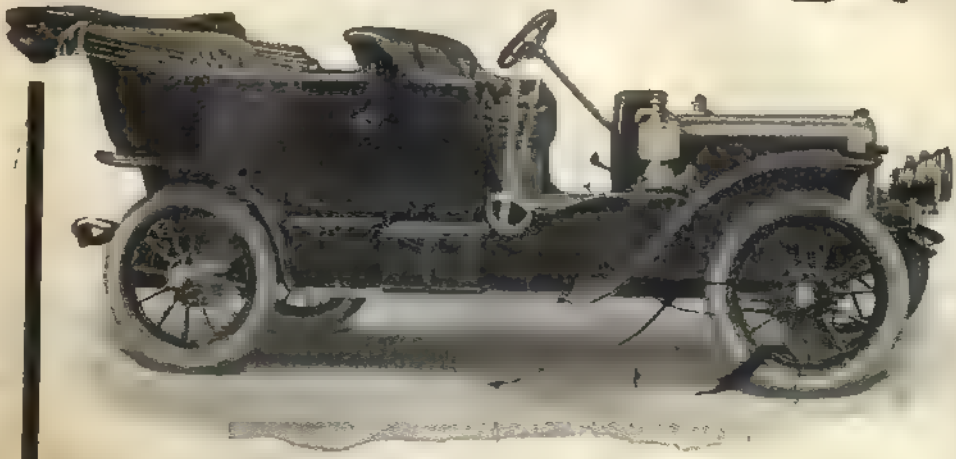
The Only Sootless Mica Spark Plug. New Invention. Only Sootless Plug that will not break in air cooled engines. Guaranteed six months Sootless. Regular sizes, $1.75 each.



Manufactured by

THE OAKES & DOW CO.
15 CHARDON ST., BOSTON, MASS.

WINTON



How Many Miles?

The car you are thinking of buying—how long will it stand up? Is it a make that has no record of durability, or is it a Winton? If it's a Winton, you are making a safe choice, for the Winton is the car that endures through all the hardships of American motoring.

Witness these specific instances:

82,000 Miles—1902 Winton. Owned by Mr. Geo. Bruce, Sacramento, Cal., and used in rental service. Still running and declared to be good enough for five more years of work.

22,000 Miles—Model K Winton. Owned by Mr. John H. Gibson, Des Moines, Ia. "Hard to find a car that will do better," says Mr. Gibson.

16,835 Miles—Model K Winton. Owned by the Hub Rental Co., Los Angeles, Cal., and used in rental service. Good for several years more.

15,620 Miles—Model K. Winton. Owned by Mr. Henry Weber, Goldfield, Nevada. Bought in New York and driven overland to destination. Used constantly around the mining camps and as good to-day as a new car.

13,000 Miles—1904 Winton. Owned by Mr. Robt H. Simmonds, Warehouse Point, Conn. Delivering such satisfactory service that Mr. Simmonds has not seen the necessity of purchasing a newer car.

Buyers of Winton cars do not find it necessary to purchase a new model every year.

If you are buying a car for genuine service, you are absolutely safe in selecting a Winton of any model.

TYPE X-I V—Four 4½ x 5 OFFSET cylinders, $2500. Runabout, $2500; Limousine, $3500.

MODEL M Four 5 x 5 OFFSET cylinders; selective gear transmission four forward speeds, direct drive on third speed, multiple disc clutch, $3500; Runabout, $3500; Limousine, $4500.

The Winton Motor Carriage Co.

Member A. L. A. M.

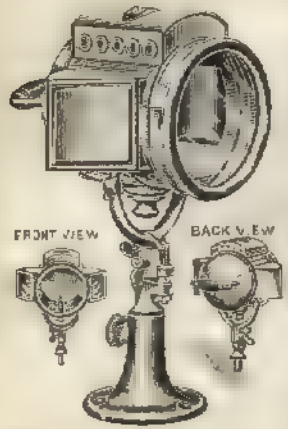
CLEVELAND, O., U. S. A.

We conduct our own Branch Sales Depots in New York, Boston, Philadelphia, Pittsburg, Chicago, Detroit and London.

COMPLETE MODERN LINE OF OIL AND GAS

20th Century Automobile Lamps & Generators

Send for MAY 1st CATALOGUE 20th CENTURY MFG. CO., 19 Warren St. N. Y.



Note latest 20th Century Searchlights

"Baby Grand" series

BOAT Head, Port and Starboard combined

LIGHTS with variations for Automobiles and Motor Cycles

Special literature on these Lamps FREE

20th Century "SEPARATE GENERATOR"

MOTOR CYCLE — BOAT — BICYCLE

"DRIVING" AND SMALL CLASS AUTOMOBILE

GAS LAMPS

¼ FT BURNER 6 TO 8 HOURS

Adopted by all Prominent Motor Cycle Manufacturers

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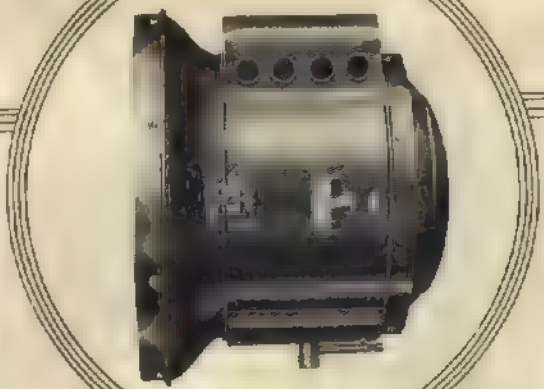


Scientifically Made Auto Lamps

¶ Some lamp makers seem to think all that is necessary in making a Motor Car Lamp is to put a jet and lens mirror in a nicely polished body with a glass front. ¶ There is science required that each part be perfectly made and placed in exactly the correct position to give the greatest amount of light. ¶ SOLAR LAMPS are not only beautiful, but are scientifically made. Each one is tested before it leaves the factory, and proven to be perfect and in exact focus. ¶ That is why SOLARS always give the greatest quantity of light from the amount of gas consumed. ¶ The quality of material is always the best and is extra heavy to withstand any wear. The assembling is done only by the most expert lamp makers in the country. ¶ These are some of the points why you should equip your car with a

Solar

Our 1907 Catalogue tells all about them. It's free—want one?

BADGER BRASS
MANUFACTURING COMPANY,
KENOSHA, WIS.

Eastern Branch, 11th Ave., 36th and 37th Streets, New York City

PANHARD OILS AND GREASES

The BEST Automobile Lubricants on the market.
This has been proved by exhaustive tests.

PANHARD CYLINDER OIL – Made in Four grades—light, medium, heavy and extra heavy. **ABSOLUTELY WILL NOT CHAR.** Put up in barrels, half barrels, 10 and 5 gallon jacket cans, and 1 gallon tins, as shown in cut.

PANHARD CUP GREASE Made in several grades. Used on the armatures, all bearings, axles, and any place where a grease can be used. **IS NOT AFFECTED BY THE WEATHER**—an important consideration. Put up in barrels half barrels, 100 lb. kegs, 50, 25, 10 and 5 lb. cans.

PANHARD TRANSMISSION GEAR CASE OIL—A heavy semi-oil, between the consistency of grease and oil, for Differentials, Planetary and Sliding Gears. **IT HAS NO EQUAL.** We also make it in a heavy free-flowing oil, for those who require that kind. Put up in barrels half barrels 5 and 1 gallon cans with a large opening.

PANHARD ANTI-FLUID Used solely for Planetary, Sliding Gears and Transmission for those who desire a grease. Will not run out case and stands a high heat test. Packed in 25 lb., 5 lb., and 1 lb. cans, as shown in cut.

GEO. A. HAWS

Manufacturer of Auto Oil and Greases

73 PINE STREET, NEW YORK

The Eyes of the Night

SOLAR LAMPS

BADGER BRASS MFG. CO. KENOSHA, WIS.

EASTERN BRANCH 11th AVE., 36th-37th STS. NEW YORK

The Graves & Congdon Auxiliary Seat

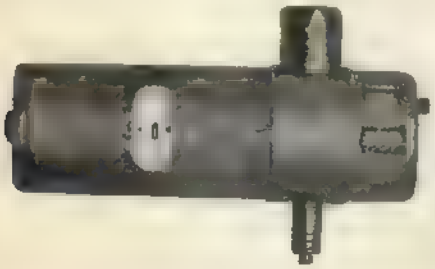
Graves & Congdon Body & Seat Company Oak street, Amesbury, Mass., makers of automobile bodies, are also putting out an auxiliary seat which can easily be removed from the car if desired or folded up when not in use. It is furnished either in the white or finished. It is a revolving seat and the

The Graves & Congdon Auxiliary Seat

[illegible] which it is attached to the side of the tonneau is of dove-tail construction permitting instant removal if desired, and leaving no unsightly [illegible] after removal. Two sizes are furnished. These seats are not only of pleasing appearance, but very comfortable, being well upholstered.

The Casgrain Speed Indicator

W. H. Connell Instrument Company, 34-38 Columbia avenue, Boston, Mass., markets a speed indicator which is quite different from other indicators in the method of indicating used. The indicator consists of a spiral of figures wound about a cylinder actuated by fluid current force. It is 28 inches long. The fluid is actuated by a simple paddle wheel,



The Casgrain Speed Indicator

which revolves the liquid. The faster the car goes, the faster the paddle wheel moves, and the steady flow of the liquid gives a steady reading of the speed. There is no chance for a jar or jolt to affect the reading of the instrument. All the parts are heavily made to stand the hard usage to which automobiles are subjected.

The reading of the instrument can be adjusted to any angle without disturbing the position of the driving shaft.

The knuckle joint is of the ball and socket type and made heavy to correspond with the rest of the instrument as to strength and durability. It will fit any make of car. The instrument lists at $50 and is guaranteed against defective workmanship or material.

"Onward" Wrenches

The Onward Co., 531 West Fifteenth street, Chicago, Ill., which recently succeeded to the business of E. T. Harris, has added to its line of cycle hubs, etc., tempered steel

The "Onward" Wrench

wrenches, which are notable for their strength, lightness and durability. A number of sizes are offered and special sizes can be furnisht on order.

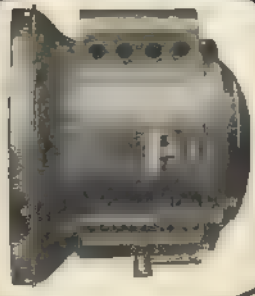
Sponges and Chamois Skins for Automobilists' Use

G. H. Worcester & Co., 35 Exchange street, Boston, Mass., are selling Rock Island sponges and high-grade chamois skins for the automobilists' use. The sponges are claimed to be the best obtainable, coming from the rocky shore of Nassau. They vary in size from very large to as small as an orange, the large ones are the toughest because they are the oldest, and are universally used by the automobile people. Sponges are sold at auction by the natives to brokers, who buy for the large houses in New York and London. These people maintain their own packing houses, where the goods are prepared for market. The process of packing and preparing consists of drying and curing the sponges, then packing them in bales which [illegible] are then ready for shipment north. Their chamois skins are oil tanned.

"Healy" Inner Tube

The Healy Leather Tire Company, of 90 Gold street and 1906 Broadway, New York, have been selling for some time an inner tube which they claim is giving universal satisfaction. This tube is made of a very high grade of red rubber, having a peculiar composition which gives it extreme toughness. They are wrapt in an unusual manner, which gives a smooth finish and nice appearance. The joint is also made by a new method, which makes it so strong that it is absolutely impossible for it to separate. The company guarantees to repair all punctures in them free of charge for one year.

Stewart & Clark Manufacturing Company, Chicago, inform us that they have been granted the patent on the Stewart Speedometer.



THE SIMPLER, THE STRONGER—ALWAYS

SOLARS are not only of simple, strong construction, but made of strongest material—heavy drawn brass. Their few parts add to their solidity. The way these parts are put together—riveted and screwed—never soldered—further fortifies Solars against the hardest knocks and jars on the road. ¶ Their construction is not only strong, but scientific. ¶ EXACT FOCUS that utilizes ALL the light. ¶ Each lamp thoroughly inspected before shipment. ¶ SOLARS ARE THE STRONGEST LAMPS MADE AND GIVE THE STRONGEST LIGHT.

BADGER BRASS MFG. CO., KENOSHA, WIS.

EASTERN BRANCH, 11TH AVE., 36-37 STS., NEW YORK CITY

Non-Skid

Rubber Tread

BAILEY'S

"Won't Slip" Tread TIRES

THREE TIMES Victorious

1905-1906-1907 GLIDDEN TOURS

They carried the cars making **perfect scores** to **VICTORY** by their **PERFECT TRACTION.** They prove to the world that they are **BEST.**

What better endorsement could they have? What better proof could you ask for? Then **INSIST** on having **BAILEY "WON'T SLIP" TREAD TIRES.** They are to the **AUTOMOBILE** what a **RUDDER** is to the **SHIP.**

The **world wide** popularity of the Bailey "Won't Slip" Tire has been made entirely on its merits. The "mouth to mouth" advertising by those who **ride** them and who have found in them a tire which proves its **reliability, durability** and **superiority** over **any** and all anti-skid tire tread constructions has made it impossible for 8 of the largest tire manufacturers in the United States to supply the demand for Automobiles, motor cycles and bicycle tires with Bailey Tread. There is no **metal** in the Bailey Tread to **heat** the tire, **pull** loose from the rubber or tear the **road bed.** The **rubber studs** of the Bailey Tread are the **true** principal that give **perfect traction** and prevent **skidding.** They are to the Automobile what the **rudder** is to the **ship.**

N. B.—The extra cost of the Bailey Tires on the List more than smooth of same make, is 2½ and 3 in., $1.50 each; 3½ in., $2.00 each; 4 in., $2.50 4½ in., $3.00 each; 5 in., $3.75 each.

N. B.—Now ready: Bailey's "Won't Slip" Tread Bands for covering all makes and sizes of smooth, new or partly worn tires at nominal cost by Bailey Tire Manufacturers. Write us for descriptive booklet.

C. J. BAILEY & CO.,

22 Boylston Street **Boston, Mass., U. S. A.**

N. B. The extra cost of Bailey Tires on the LIST more than smooth of same make, is 2½ and 3 inch, $1.50 each; 3½ inch, $2.00 each; 4 inch, $2.50 each; 4½ inch, $3.00 each; 5 inch, $3.75 each.

N. B.—Now ready: Bailey's "Won't Slip" tread BANDS for covering all makes and sizes of smooth, new or partly worn tires at nominal cost by Bailey tire manufacturers. Write for prices.

Non Skid Rubber Tread

Gives Perfect Traction

Bailey's "Won't Slip" Tires are Power Savers

A smooth tire on the drive wheels of a self driven car is drawn **longitudinally** to **catch traction**, thus **loss** of **power** and **speed** over all kinds of surfaces. The Bailey "Won't Slip" tire gives **perfect traction**, is **positive** in **starting** or **stopping**, and is **skid-proof**. The rubber **studs** are **never** affected by **inflation**, act as a **cushion** to the tire, and make it **90 per cent. puncture-proof**. **They must** be **best as every rider** says so, and you see them **everywhere** you go. **Eight** of the largest **tire makers** in the U. S. are making and selling **them**. They have proved the **fastest, greatest hill climbers**, most **durable**, and the **safest** tires ever made. They are to the **Automobile** what the **Rudder** is to the **Ship**. **Every dealer sells them.**

SEND FOR PRICE LIST AND BOOKLET

C. J. BAILEY & CO., Patentees

22 Boylston Street, Boston, Mass., U. S. A.

BAKER ELECTRICS

The success of an automobile depends more upon the continued satisfaction afforded its users than upon the performance of special stunts.

BAKER ELECTRICS are built for service and that they furnish it in full measure is demonstrated by the fact that Baker owners are invariably Baker enthusiasts.

BAKER ELECTRICS perform some stunts too. On May 23rd, a Baker Victoria which had been in constant use for over four months was run over Cleveland streets and boulevards, hilly and level, rough and smooth, paved and dirt roads, a distance of 101.6 miles on *one charge of the battery.*

A Baker, entered in the electric class at the Cleveland Hill Climb on June 15th, had no competitors, but to show what it could do, was sent up the hill in 1:41, beating the time of fifteen high-powered gasoline cars.

Whether used for daily service or as a car with which to perform unusual feats, no electric in the market will surpass the Baker at any point.

The
Baker Motor Vehicle Co.
18-80th Street, N. W.
CLEVELAND, OHIO

STEVENS-DURYEA LIGHT SIX

SIX CYLINDERS, 35 H. P.
PRICE $3500

A four-cylinder car can never have that delightful sensitiveness to the throttle which is a constant source of pleasure in a Six. The Stevens-Duryea Light Six follows the throttle instantly.

But to most makers Sixes are a new proposition—don't purchase an experiment simply because it is a Six. Let us show you why the Stevens-Duryea Unit Power Plant and three point suspension makes possible a six-cylinder car of faultless design.

See us at the Chicago Show.

Stevens-Duryea Company
Chicopee Falls, Mass., U. S. A.
Member A. L. A. M.

BLOMSTROM 30S.

1907 New Cars.

Everything Latest. Everything Best.

5-Passenger Touring Car, $2250.00. 3-Passenger Runabout, same chassis, $2100.00. 110-inch Wheel-base. Tires 32 x 3½ inches. New motor, 4-cylinder, vertical, 4-cycle, water-cooled, 30 B. H. P. at 1000 R. P. M. **Blomstrom's Own Design, Latest, Best. New Clutch, Blomstrom's Own; Latest, Best.** Selective Sliding Gear on Hess-Bright ball bearings, Tempered Nickel Steel Gearing. Bevel Gear Drive. Front Wheels on ball bearings.

Complete Equipment—Mats, Horn, Tools, 5 Lamps, ready for the road.

The Blomstrom 30 is not built merely to get the purchaser's money. It is built to give the buyer satisfaction on the road.

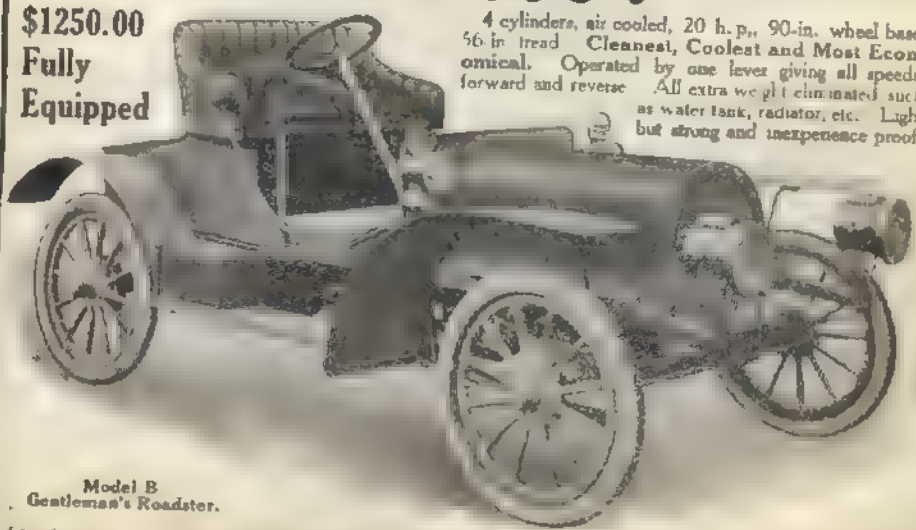
BLOMSTROM MANUFACTURING COMPANY. DETROIT. MICH.

SILENT *Servitor*

Five Lamps, Gas Generator, Horn and Tool Kit

$1250.00 Fully Equipped

4 cylinders, air cooled, 20 h. p., 90-in. wheel base, 56-in. tread. Cleanest, Coolest and Most Economical. Operated by one lever giving all speeds, forward and reverse. All extra weight eliminated such as water tank, radiator, etc. Light but strong and inexpensive proof.

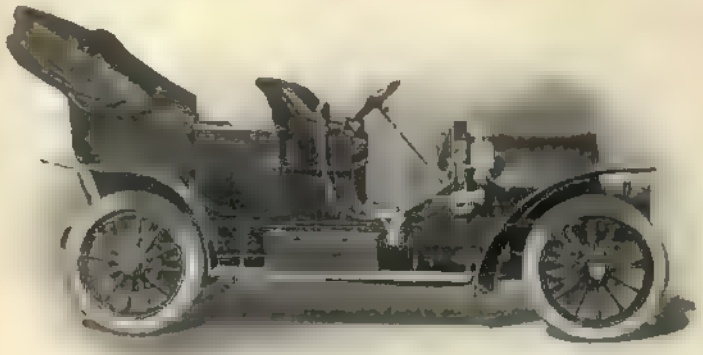


Model B
Gentleman's Roadster.

Live Agents Wanted.

THE BARNES MFG. CO., Sandusky, Ohio

THE MOORE 40 H. P. CAR



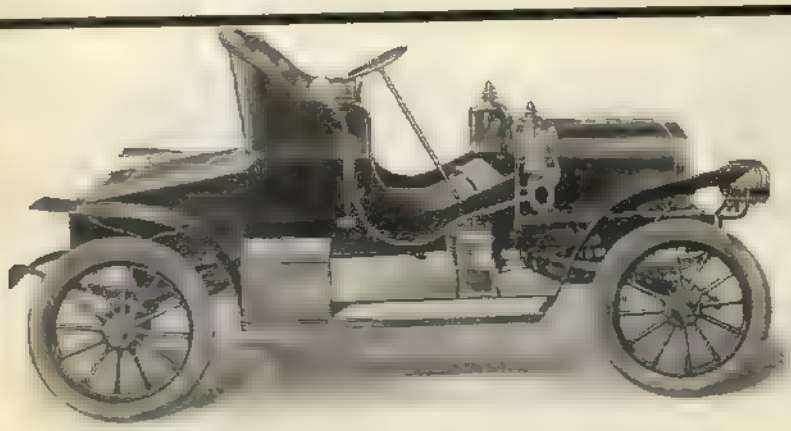
Moore Touring Car with Victoria Top

THE BALL BEARING CAR

The body is hinged at the back and can be lifted, giving access to all parts of the mechanism

MOORE AUTOMOBILE CO.

571 Fifth Avenue New York



MONARCH MODEL E

We call the attention of every agent in the United States to the Monarch Model E Runabout. It is and will continue to be the best seller in the low-priced runabout class.

This car is not an experiment. We have been making it for three years, and for three years satisfied owners have the fact tested it on all kinds of roads and under all conditions.

It is the best little car of its kind and price on the market today.

SPECIFICATIONS

Model E, 2-cylinder, opposed, 16 H. P. Engine bore 4 inches, stroke 4 inches. Monarch patented [illegible] spark [illegible] 60 inches high. Wheel base 88 inches, wheels [illegible] Timken [illegible] Detroit [illegible] Schebler [illegible] Weight 1,850 lbs. Price, complete with five lamps and tools, $900. The power plant complete is a model.

MONARCH MOTOR CAR COMPANY

Monadnock Block, Chicago Factory, Franklin Park, Ill.

Write to either address for complete information, Dept. 10.

BLOMSTROM 30S.

1907 New Cars.

Everything Latest. Everything Best.

5-Passenger Touring Car, $2250.00. 3-Passenger Runabout, same chassis, $2100.00.

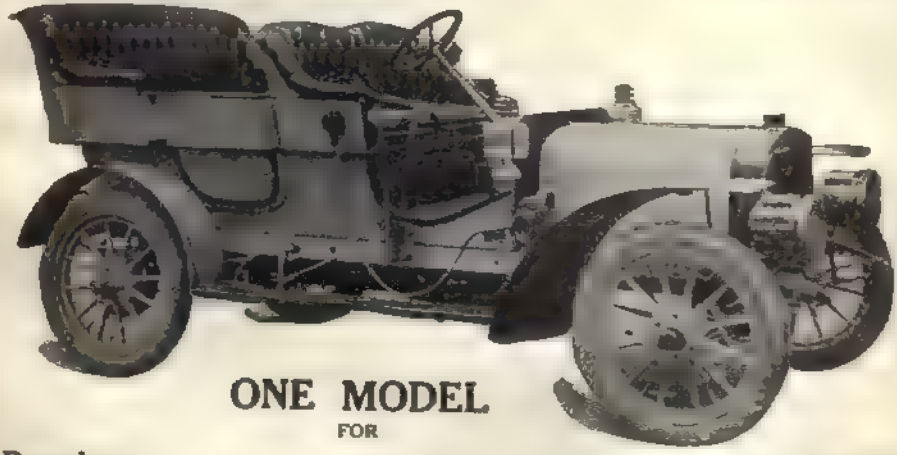
110-inch Wheel-base. Tires 32 x 3½ inches. New motor, 4-cylinder, vertical, 4-cycle, water cooled, 30 H. P. at 1000 R. P. M. **Blomstrom's Own Design. Latest, Best. New Clutch Blomstrom's Own; Latest, Best.** Selective Sliding Gear on Hess-Bright ball bearings Tempered Nickel Steel Gearing, Bevel Gear Drive, Front Wheels on ball bearings.

Complete Equipment—Mats, Horn, Tools, 5 Lamps, ready for the road.

The Blomstrom 30 is not built merely to get the purchaser's money. It is built to give the buyer satisfaction on the road.

BLOMSTROM MANUFACTURING COMPANY, DETROIT, MICH.

Dorris 1907 Dorris

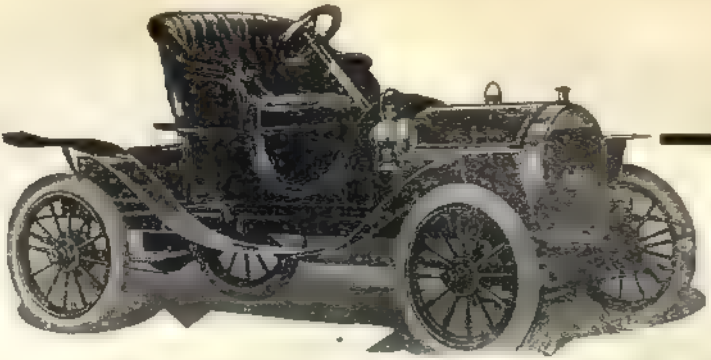


ONE MODEL

FOR

Runabout - - -	30	Horse	Power - - -	$2500
Touring Car - -	30	"	" - -	2500
Limousine - - -	30	"	" - - -	3500

DORRIS MOTOR CAR CO., St. Louis



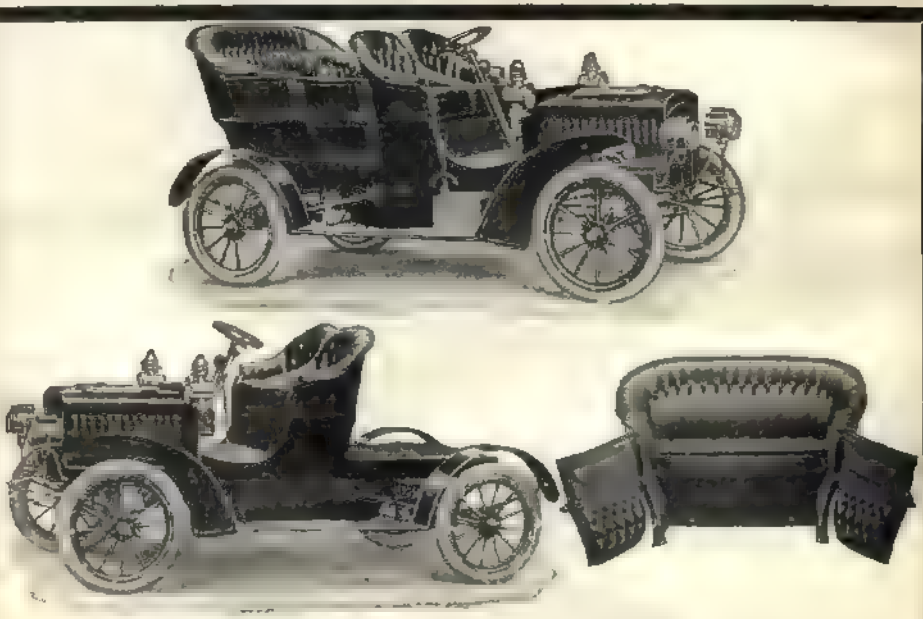
"THE SIMPLEST AUTO EVER BUILT
AND THE MOST EFFECTIVE"

THE "ATLAS" RUNABOUT

THAT'S a strong claim, but the **facts** bear it out. 20 h.p., two cylinder, **two cycle** engine, of **only** 5 (**Five**) **Moving Parts.** No adjustments, no breaking. **Business,** quick, sharp and thorough.

$1400

The Atlas Motor Car Co. Harry A. Knox, President
SPRINGFIELD, MASS.

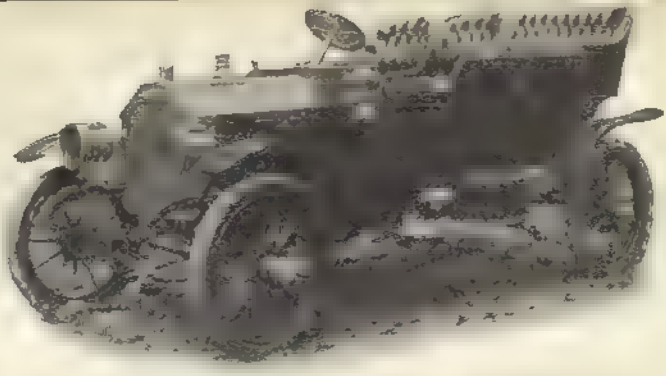


INTERESTING FEATURES.

24 H. P. Motor. Mechanical Oiler. 100" Wheel Base.
Detachable Tonneau. Tilting Body.

The largest, most powerful and the easiest riding car on wheels selling at $1250.00
We can make prompt deliveries.
Ask for specifications of our 60 H. P. 4 cylinder machine, price $3800.00

Model Automobile Company, - · **Peru, Indiana.**



BLOMSTROM 30S.

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110-inch Wheel-base. Tires 32 x 3½ inches New motor, 4-cylinder, vertical, 4-cycle, water cooled, 30 B. H P. at 1000 R. P M **Blomstrom's Own Design, Latest, Best. New Clutch Blomstrom's Own; Latest, Best.** Selective Sliding Gear on Hess-Bright ball bearings Tempered Nickel Steel Gearing, Bevel Gear Drive, Front Wheels on ball bearings.

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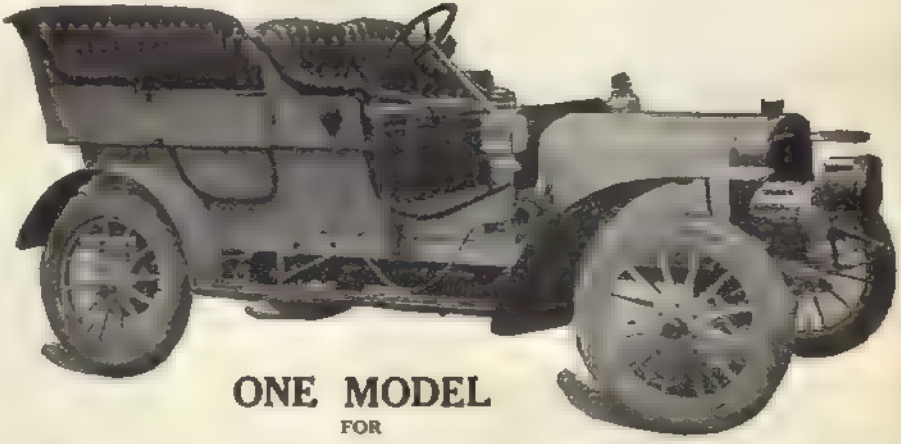
Dorris 1907 Dorris



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Limousine - - -	30	"	" - - -	3500

DORRIS MOTOR CAR CO., St. Louis

CORBIN

Important to Dealers and Agents

We are now appointing agents for 1908 for the "full-jeweled" Corbin.

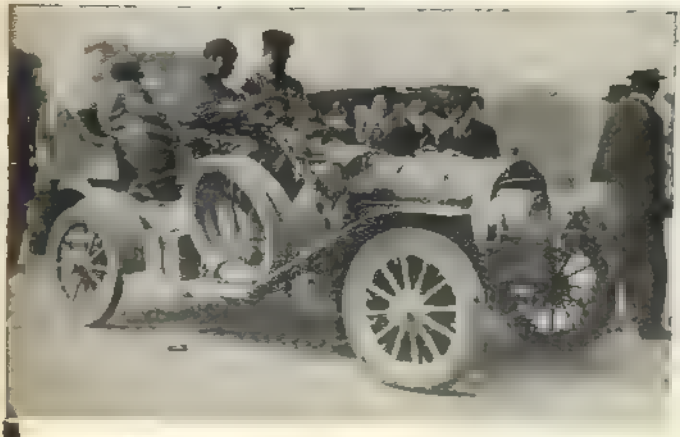
Get in line if you want a high-grade proposition, built and backed by the "House of Corbin" whose reputation for quality is world-wide.

Application for territory should be addressed to Sales Dept, E. H. BRANDT, *Manager*

CORBIN MOTOR VEHICLE CORPORATION

Member of Association Licensed Automobile Manufacturers

New Britain, Connecticut



A Wonderful

World's Record

NOTHING EQUALS IT IN MOTOR CAR HISTORY

Racytype Mora Roadster

No 1 Finished both New York and Chicago Sealed Bonnet Contests perfect. All power plant seals intact from New York to Chicago and back again.

This means 2853 miles of Rough Travel without a Single Adjustment to Power Plant

The World's Record for any class of motor cars proves our slogan

"MECHANICALLY RIGHT"

Write for "The Sealed Bonnet." It tells all.

MORA MOTOR CAR CO.

Office and Works, 17 Mora Place, Newark, N. Y.

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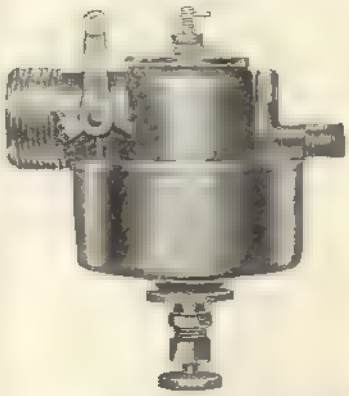
BLOMSTROM MANUFACTURING COMPANY, DETROIT, MICH.

IF THE BEST IN CASTINGS IS NONE TOO GOOD FOR YOU, WRITE OBERDORFER.

The Oberdorfer Carburetor



Gasoline Engine builders and Automobile and Motor Boat manufacturers will be interested in our new carburetor because it combines efficiency and economy.

Very light; has a float valve which may be cleaned without disturbing other parts and which is held on seat by its own weight combined with the weight of the gasoline above it. This insures freedom from leaks.

SIMPLICITY EFFICIENCY ECONOMY

Get a circular. Write to-day.

M. L. OBERDORFER BRASS CO.

FORMAN ST., SYRACUSE, N. Y.

BAKER ELECTRICS

The success of an automobile depends more upon the continued satisfaction afforded its users than upon the performance of special stunts.

BAKER ELECTRICS are built for service and that they furnish it in full measure is demonstrated by the fact that Baker owners are invariably Baker enthusiasts.

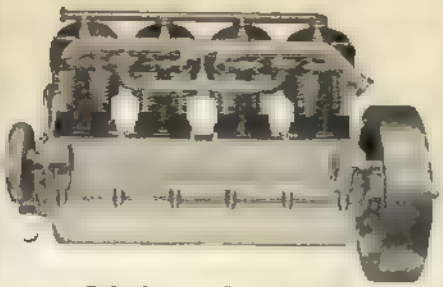
BAKER ELECTRICS perform some stunts too. On May 23rd, a Baker Victoria which had been in constant use for over four months was run over Cleveland streets and boulevards, hilly and level, rough and smooth, paved and dirt roads, a distance of 101.6 miles *on one charge of the battery.*

A Baker, entered in the electric class at the Cleveland Hill Climb on June 15th, had no competitors, but to show what it could do, was sent up the hill in 1:41, beating the time of fifteen high-powered gasoline cars.

Whether used for daily service or as a car with which to perform unusual feats, no electric in the market will surpass the Baker at any point.

The
Baker Motor Vehicle Co.
18-80th Street, N. W.
CLEVELAND, OHIO

The Reeves
4 CYLINDER
4 CYCLE
AIR OR WATER COOLED
ENGINE



4 Cylinder, 4 Cycle | Water Cooled Automobile Engine

2 Cylinder Opposed | 4 Cycle Air Cooled Automobile Engine

These engines are built for those buyers who appreciate excellence in design, material and workmanship and know that good motors cost more than poor ones to manufacture and therefore cannot be sold at scrap iron prices.

The 4 Cylinder Model L, develops 22-24 H. P., having 4 well finished cylinders, 4" x 4". It is substantial, symmetric, simple and silent.

The 2 Cylinder Opposed Model N, has 4" x 4" cylinders and develops 10 H. P.

Send for Illustrated Circulars.

REEVES PULLEY CO.
Columbus, Ind.
General Sales Agt. Roger B. McMullen,
1241 Michigan Ave., Chicago, Ill.

The "Borbein" No. 35 Car

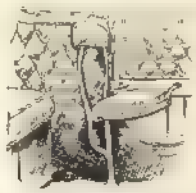
This car is built up very substantially for racing and roadster purposes, and is ready for a six-cylinder motor and transmission. It is the product of the Borbein Auto Co., 2109-2111 North Ninth street, St. Louis, Mo.

The front axle is I-beam section with large roller bearing spindles. The rear axle also has roller bearing spindles. The artillery wheels have steel rims fastened on them, ready to take 4x36-inch clincher tires. The rear wheels have sprockets with brake drums fastened on same. The teeth on sprockets are cut for 1¼x⅝-inch roller chain. The track is 56 inches, and wheel base 120 inches. The body is made of wood with a large metal shield back of the dash. The radiator is of a special large size, and the folding hood is 50 inches long. The manufacturers also furnish wheel steering devices, fenders and running boards if desired. They make several sizes and styles of these cars.

The "Borbein" No. 35 Car Ready for Power.

The 20 Century Extra Tonneau Seat

The 20th Century Extra Tonneau Seat just being placed on the market by F. W. Anderson & Co., Brown and Uber streets, Philadelphia, Pa., is a new departure in seats of this kind. The seat can be attached by a novice, as the only attachments necessary are a small plate to be screwed in the floor on which the leg revolves and a collar iron that attaches to the door jamb about on the level of the seat board and carries the straight leg of the seat, allowing the seat to revolve in it, in and out.



The 20th Century Extra Tonneau Seat.

This seat is adapted to any car that has 12 inches or more space between the back edge of the tonneau door and the front edge of the back seatboard. It is constructed of the best machine steel, all hand forged, and the frame is of one continuous piece with but one weld, thus making a very rigid and indestructible seat frame, capable of taking any possible strain without breaking. On the upper part of the steel hoop is bolted the lazy back and this lazy back is upholstered with hand buffed leather over the best curled hair obtainable.

The seatboard is placed in this steel hoop in the proper position on pivots, and is held in the open and closed position by steel lugs. When the seat is not wanted, the seatboard is turned up in the frame under the lazy back, and the seat and back make one continuous whole. Then the seat is allowed to revolve backward until it folds flat against the side of the car, in which position, it occupies exactly 2 inches room alongside of the side of the car and can be removed entirely by simply lifting the seat up, if removal is desired.

The manufacturers are also putting on the market some new styles in automobile tops, and rumble seats for high powered runabouts.

Springfield Hat & Cap Co., 27-35 Taylor street, Springfield, Mass., are including in their 1908 line a double band cap which ties under the chin with a silk ribbon and is provided with a small ventilator in the flap of the band, so adjustable about the ear that the wearer, tho having his ears covered for warmth, does not have his hearing obstructed.

Besides the very valuable special features that have characterized this and the last issue of the Journal, the next four issues will be special numbers of great value, and no persons interested in the manufacture, sale or use of motor cars can afford to miss any of them. If not a regular subscriber, send $2 at once and have your subscription entered for one year. Cycle & Automobile Trade Journal, Forty-ninth and Market streets, Philadelphia, Pa.

Atwater Kent Spark Generator

Praised By The

ELMORE MFG. CO.

Taken from the Philadelphia Record of Oct. 6th, 1907.

NO IGNITION TROUBLES

Elmore Company Announce Remarkable Improvement.

Absolutely and unquestionably one of the most remarkable improvements that will be shown in the automobile season of 1908 is the ignition system of the new Elmore valveless two-cycle cars. After a series of the most exhaustive tests, both by the factory and by purchasers who have reported to the factory, the Elmore Manufacturing Company, which makes the Elmore cars, has come out with the most remarkable promises and guarantees ever offered.

Their tests have convinced them—and they will verify the statement—that upon one set of six ordinary six-inch dry cells the Elmore car will run more than 1500 miles, and that it has done over 2000. This sounds somewhat stupendous, but the name and reputation of the Elmore Manufacturing Company is absolutely back of it. In fact, were the truth told, even greater figures than those can be cited and proved to be the rule.

This means that with the new system an average season's driving can be accomplished on two sets or a dozen six-inch dry cells, with which every Elmore is equipped. Not only that, but the system is so sensitive that it has been known to work for many, many hours on a set of batteries thrown away as exhausted. In fact, the operation has been performed till the cells were drained down to one ampere.

This new ignition system absolutely does away with timer troubles, with vibrator coil worries and with depleted, shortened or run-down storage cells. All these things so bothersome are banished and perfection is almost, if not quite, reached. Because of the success of this new ignition system and because of the proven value and success of the two cycle idea in their new cars, the Elmore people in the most unobtrusive manner are proclaiming their car for 1908 "the most perfect car of its class in the world."

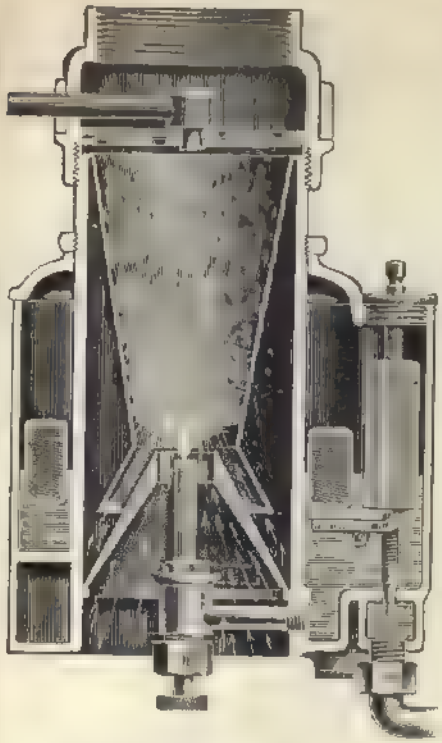
The above refers to the ATWATER KENT SPARK GENERATOR which the Elmore Mfg. Co., have adopted for their 1908 output.

Our Spark Generator gave such entire satisfaction on Thomas Flyers in 1907 that the E. R. Thomas Motor Co. will again use them for 1908.

"Once used, Always used."

ATWATER KENT MFG. WORKS,

117 N. Sixth Street, Philadelphia. Pa.



The BOWERS CARBURETOR

PATENTS PENDING

PRODUCES FROM AN INTERNAL COMBUSTION MOTOR

ITS MAXIMUM EFFICIENCY.

RESULTS:

GREATER FLEXIBILITY, POWER AND SPEED

WITH A

MINIMUM FUEL CONSUMPTION.

A study of sectional drawing will convince you that the principles embodied and method of forming a perfect mixture are absolutely correct, and that the results secured must necessitate superiority over that attained by others with their crude methods.

WE GUARANTEE the claims we make, and invite Automobile manufacturers to verify them with the sample instruments, which we will gladly furnish for this purpose.

Catalog on request.

The F. E. BOWERS COMPANY, Inc.
New Haven, Conn.

GILBERT AUTOMOBILE
THE ONLY ONES WORTH YOUR MONEY

FABRIC SUPPLIES
QUALITY .... SUPERIORITY

TIRE CASE

STORM HELMET

TIRE SLEEVE

WE MAKE EVERYTHING IN RUBBER FABRIC

Sold Everywhere

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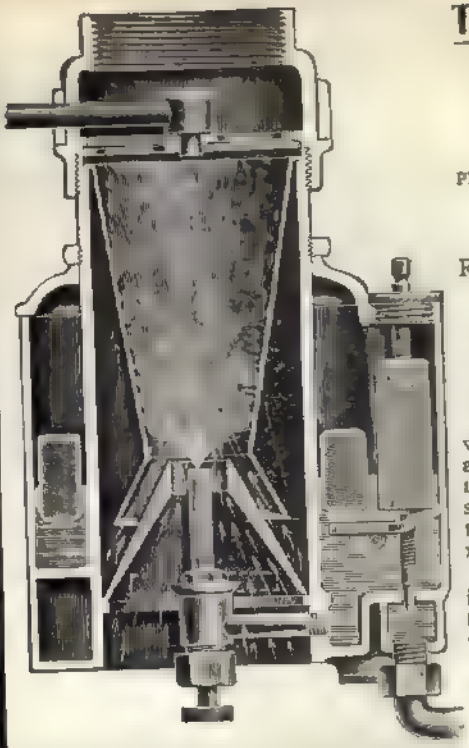
PONCHO

GILBERT MANUFACTURING CO.
NEW HAVEN, CONN.



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GILBERT MANUFACTURING CO.

NEW HAVEN, CONN

D. M. T. Co.'s Runabout

We show herewith two of the latest products of the D. M. Tuttle Co., Canastota, N. Y., builders of gasoline engines and launches.

Their "Little" runabout has a length of 16 feet 6 inches, with a 4-feet beam. It weighs 330 pounds with a 2-H. P. motor. The keel and timbers are of selected white oak. The white pine planking and decks are held in place with copper fastening. The transom, gunwale and engine bed are of selected oak. All hard wood is finisht with two coats of best spar varnish. The outside is painted with three coats of blue paint to water line and three coats of white below. Interior is painted white, with seats and floor of cherry red. The price complete with a 2-H. P. motor is $175 and with a two-cylinder 4-H. P. motor $235

The D. M. T. Co.'s "Little" Runabout.

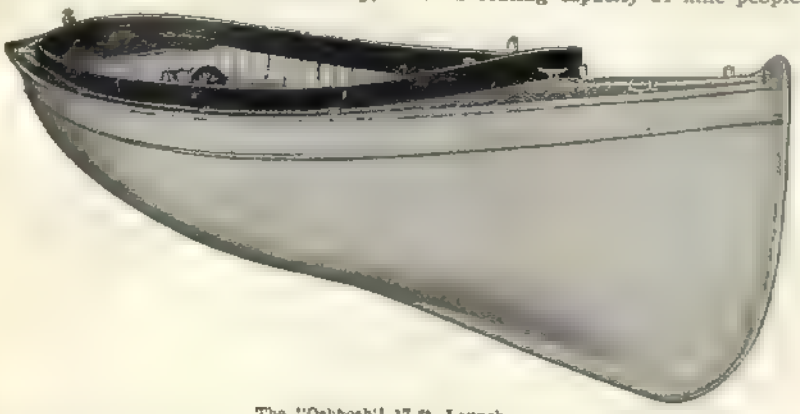
The "Gentlemen's" runabout is designed on the very best lines for speed and stability, developing a speed of fourteen to fifteen miles, without any sacrifice of seaworthiness. Its length over all is 22 feet, beam 4 feet. In construction the very best of material and workmanship are used. Its frames are of selected white oak; planking of white pine or Washington fir; copper and composition fastenings thruout; covering board and coaming and seats of oak, dark finisht; decks and transoms of selected mahogany. Two cross seats are provided, accommodating two persons each with single chair for operator. The engine is located in the bow forward of operator, with ratchet steering wheel and control lever immediately at hand, same as in an automobile. The price with two-cylinder 10-H. P. motor, with reversible propeller, is $750, and with Carlyle Johnson reverse clutch and solid propeller, $800.

The D. M. T. Co.'s "Gentlemen's" Runabout.

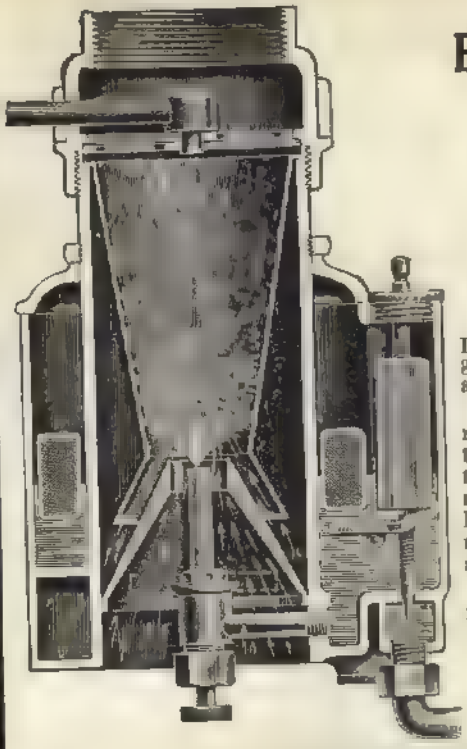
The "Oshkosh" 17-Foot Launch

The Oshkosh Boat Works, Oshkosh, Wis., well-known designers and builders of high-class launches and all types of sea craft are offering for this season a 17-foot gasoline launch, which has a very light draft, allowing it to be used on almost any lake, at the same time presenting a handsome appearance

The boat is 17 feet long and has a 4-foot 2-inch beam. It is planked with both cedar and cypress ⅜-inch thick. The ribs are of white oak 1¼x½-inch. The keel, stern, bow and stern post are of clear white oak. It has a seating capacity of nine people. It is fitted with a 1¼ H. P. motor, brass steering wheel, swedes iron tiller rope, brass fittings and develops a speed of from 7 to 8 miles an hour. The gasoline tank capacity is 10 gallons, and the boat draws but 11 inches of water



The "Oshkosh" 17 ft. Launch.



THE —
BOWERS CARBURETOR
(PATENTED)

THIS INSTRUMENT PRODUCES THE
MAXIMUM EFFICIENCY
FROM INTERNAL COMBUSTION MOTORS
INCREASING THE
POWER, SPEED,
AND FLEXIBILITY ON A MINIMUM FUEL CONSUMPTION

It functions on correct scientific principals and is greatly superior in its method of gas formation, workmanship and finish, to any carburetor ever brought out.

Our modern new factory, allows us to make prompt deliveries. We will be pleased to forward sample instruments to manufacturers who are interested for this season's and next requirements, and believe you can hardly over-look this opportunity of increasing the popularity of your cars, by securing absolute perfection in carburation.

Owners of cars, who have ideas of larger motors are advised to try a Bowers Carburetor first, it makes giants of the weaklings.

CATALOG FOR THE ASKING

The F. E. BOWERS COMPANY
New Haven, Conn.

GILBERT AUTOMOBILE
THE ONLY ONES WORTH YOUR MONEY

FABRIC SUPPLIES
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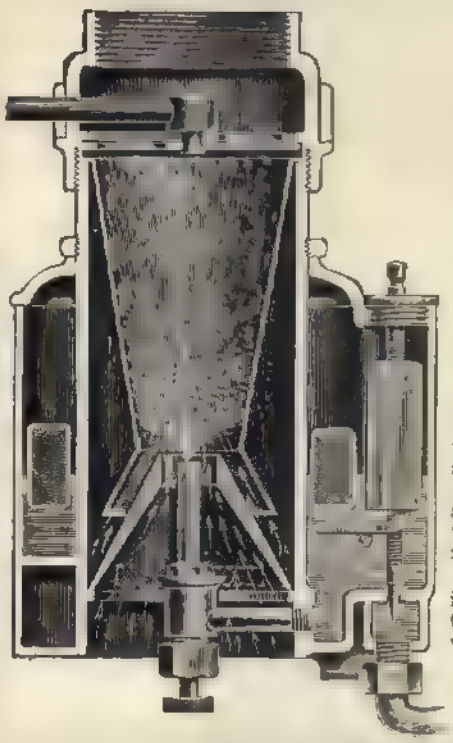

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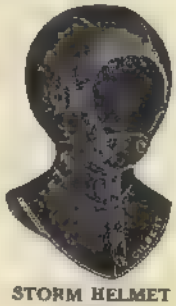

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GILBERT MANUFACTURING CO. **NEW HAVEN, CONN**

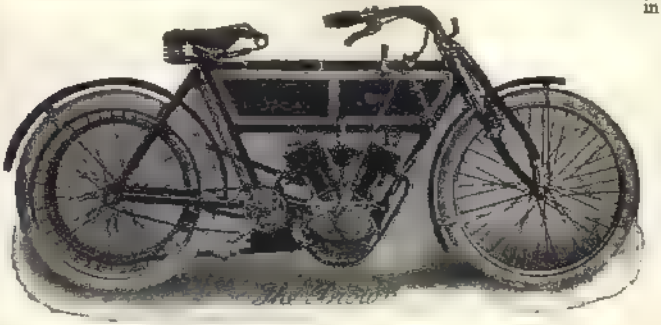
The 'BROWY' MOTOR BICYCLE

England's Leading Motor Bicycle.

WINNER of practically ALL the principal open competitions during the past three years, often beating machines of double its own h.p.

AGENTS WANTED IN AMERICA.

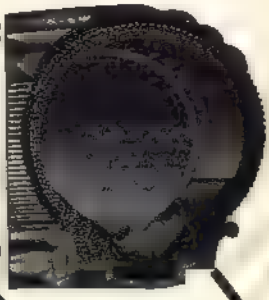
We are prepared to appoint Agents in the various States for this machine, which is the last word in motor cycle construction.



Address –

BROWN BROTHERS (LIMITED), GT. EASTERN STREET, LONDON, Eng.

If your Motor-Cycle is equipped with



GOODYEAR

Detachable Tires and Rims

the Tires WON'T Come Off, Rim-Cut or Creep

Because The tire *exactly fits the rim*, and the piano-wire braids vulcanized into the base of the tire *absolutely prevent* the tire from stretching. This entirely does away with blow-outs and the use of any tools but the hands.

The flanges are rounded where they bear against the tire, so that the tire will not rim-cut even though ridden deflated.

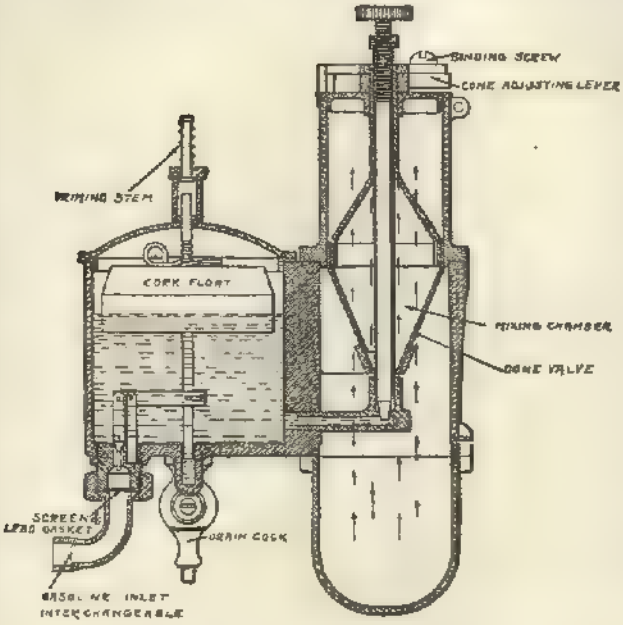
The piano-wire braid is woven in such a manner that when the tire is even partially inflated the braid tends to shorten, thereby causing it to *grip the rim* with such force as to effectually *prevent creeping*.

There are many other good features which make this tire the only *troubleless tire*. Write today for *special proposition* to riders.

The Goodyear Tire & Rubber Company, Myron St., Akron, Ohio, U.S.A.

BRANCHES: Boston 261 Dartmouth St. New York, cor 64th St. and Broadway, Chicago, 82-84 Michigan Ave. Cincinnati, 317 E. Fifth St. Buffalo 719 Main St. St. Louis, 712-714 Morgan St. Los Angeles, 983 S. Main St. San Francisco. Denver, 220 Sixteenth St. Detroit, 248 Jefferson Ave. Philadelphia, 1404 Ridge Ave. Cleveland, 826 Frankfort Ave. N. W.

THE BUFFALO CARBURETOR



The top notch in carburetor construction has been reached in the BUFFALO for 1908. Those manufacturers who want their new models to be free from carburetor troubles will do well to follow the lead of FORD, WELCH, KNOX, WAYNE, JACKSON, QUEEN, WOLFE and others, and equip their 1908 cars with the BUFFALO.

Some of the Advantages of the BUFFALO

1.—It is a mechanical carburetor, flexible and reliable.

2.—It is economical in gasoline cosumption, saving from 20 to 50 per cent.

3.—It gives complete control of the motor at all times.

4.—It produces greater horse-power per gallon of fuel, consequently greater mileage.

5.—It is not affected by vibration nor atmospheric conditions.

Give it a trial. We know it can convince you that our claims are true.

Buffalo Carburetor Co.

889 Main St., Buffalo, N. Y.

Get The NOCK Habit!!!

It will pay you.

Everyone who wants to purchase

Automobile and Bicycle Sundries

right, goes to NOCK.

It has taken years to build up that reputation, but we have it, and if you want to buy right, better fall in line.

GEO. W. NOCK CO., Inc.
126 N. Fourth St., Phila., Pa.

B-R Commutator

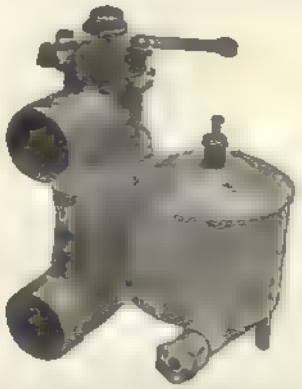
The Beckley-Ralston Co.
80-82 & 84 Michigan Ave., Chicago.

WE have purchased from Receiver's Sale of A. H. Funke $10,000 worth of Automobile Lamps, Generators, Spark Plugs, Horns and Tubing.

We pay spot cash for anything in the Automobile line, and sell the same way, which is the only road to success.

Wooster Auto Company
88 Chambers St., - New York

The Buffalo Carburetor



produces greater horse power per gallon, gives perfect control of the motor under all conditions, has great flexibility and produces a perfect mixture at all speeds.

It is a Mechanical Carburetor.

Used and endorsed by leading automobile manufacturers.

BUFFALO CARBURETOR CO.,
889 MAIN ST., BUFFALO, N. Y.

'B'-LINE OIL GREASE GUNS

The Handy Gun for Unhandy Places

We Want Only Live Dealers as Agents

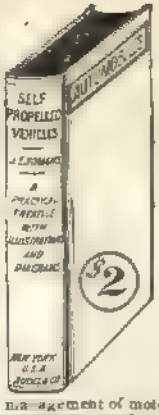
The only high grade All Metal Oil Gun on the Market

OPERATES WITH ONE HAND

Write for Dealers' Discounts

DELIVERIES PROMPT

RANDALL-FAICHNEY CO. BOSTON MASS.



How to

RUN AN AUTO

Do You Own an Automobile?
Are You Interested in Automobiles?
Do You Repair Automobiles?
Do You Operate an Automobile?
Are You Intending to Purchase an Automobile?

Then an early purchase of the *1907* edition of "*Homan's Self-Propelled Vehicles*" will prove a good investment

This work is now the accepted standard on the practical care and management of motor cars—explaining the principles of construction and operation in a clear and helpful way and fully illustrated with many diagrams and drawings making it of value to the intending purchaser, driver and repair man.

The subjects treat of the needs of the man behind the wheel, and are presented clearly concisely and in a manner easy to understand by the reader be he a beginner or an expert. This good book will be sent to any address in the world, postpaid, upon receipt of two dollars.

Contains 608 pages, over 400 diagrams and illustrations, printed on fine paper, Size 5½ by 8¼ inches, with generously good binding Highly endorsed. Specimen pages free on request.

THEO. AUDEL & CO., Publishers
63 Fifth Ave., New York City

Evans Electric Vulcanizer

Saves Half Your Tire Expense

Price $20.00

Will earn its cost many times in a season. Vulcanize your own Shoes and Tubes.

GET BUSY—ASK FOR CIRCULAR

DETROIT MOTOR CAR SUPPLY COMPANY
2230 Broadway, New York City

IT IS

CRIMINAL NEGLIGENCE

not to have your car equipped with every device that will contribute to the safety of the occupants or others.

Foremost among these devices is the

VICTOR Ratchet Foot Lever

which securely locks the brake, and makes it safe to leave your car with the motor running. The wheels cannot turn until the brake is released.

It can be installed in a few minutes in any make car. Better order one now.

THE READING AUTOMOBILE CO.,
Sole Manufacturers
26 South Fifth St., Reading, Pa.

BEST by TEST

The Buffalo Carburetor

Makers of such cars as the FORD "Six-Cylinder," WELCH KNOX WAYNE JACKSON DELUXE and HARRISON have found the **BUFFALO** to be the most practical carburetor on the market. You will be safe in following their lead if you have been annoyed with carburetor troubles

Do you want detailed information?

BUFFALO CARBURETOR CO.,

889 MAIN ST., BUFFALO, N. Y.

THE MISSING LINK

On Automobiles

New Radium Indicator

Will positively indicate amount of current in BATTERY at all times.

No More Battery Troubles

A Boon to Autoists

Attached only to

New Radium Batteries

General Accumulator & Battery Co.

136 Second St.
MILWAUKEE,
WIS., U. S. A.

Write for information and prices.

Agents Wanted.

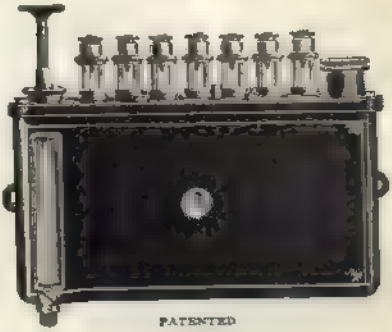
THE PEDERSEN

Mechanical Lubricator

Has earned the name of being

"The Best Oiler on the Market"

Type X



PATENTED

Mechanical Lubricator

BECAUSE—

There are no Check Valves or Springs to get out of order.

It can not gum up. Works in cold or hot weather with same adjustment.

Has constant Sight Feed.

And many other valuable features.

Ask your dealer about it, or write

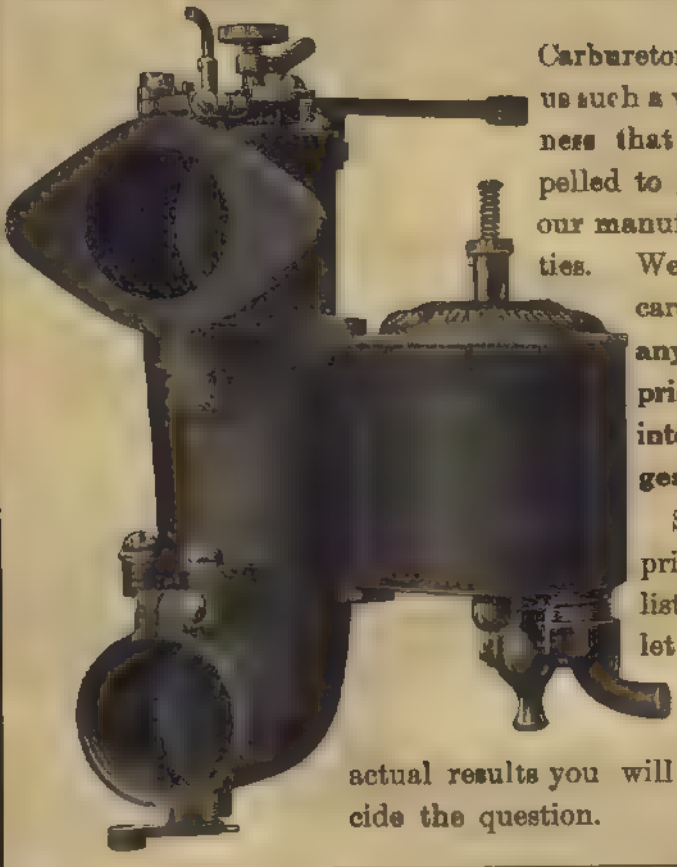
PEDERSEN MANUFACTURING CO.

838-844 FIRST AVE., NEW YORK, U. S. A.

READY FOR BUSINESS

The extraordinary results obtained from the use of

BUFFALO



Carburetors, have brought us such a volume of business that we were compelled to greatly enlarge our manufacturing facilities. We can now take care of orders of any size and at prices that will interest the biggest buyers.

Send for a blueprint and price-list, or better still, let us send you a carburetor for test. The actual results you will obtain will decide the question.

The Buffalo Carburetor Co., Mfrs.

889 Main St., Buffalo, N. Y.

National Sales Corporation, Factory Sales Manager, 296 Broadway, New York

What is Automobile Value?

Some people's estimate of the value of an automobile is gauged largely by what they have to PAY for it.

Others gauge its value by the service they GET in proportion to what they pay.

Dr. L. M. Allen of South Norwalk, Conn., who still drives one of the earliest cars we made, a 1903 Model A

SINGLE CYLINDER

Cadillac

writes under date of February 27th, 1907

"I would like to say right here that my old car is just as good as ever, and has been used almost every day since it was purchased. It has been run nearly fifty thousand miles and has been out of commission only long enough to repaint and overhaul each winter. The old car certainly has made the Cadillac popular in this section.

It takes Cadillac quality to make records of this kind, records which make further argument unnecessary.

The Single Cylinder Cadillac of to-day has practically the same motor as in 1903. Since then we have made 14,000 of them (about one-eighth of the entire American output), and it's the same story wherever you go.

It is the car that affords all there is in motoring—except the troubles.

Model K Runabout	$800.00
Model M Four Passenger Car	950.00
Model M Four Passenger Victoria	950.00
Model M Folding Tonneau	1,000.00
Model M Coupe	1,350.00
Model M Delivery	950.00

All described in Catalog M

CADILLAC MOTOR CAR CO., Detroit, Mich.

Members of Ass'n Licensed Automobile Mfrs.

Going Going Going

Two years ago there was one maker of Six Cylinder Cars in Europe—last year there were four—**this year there are eighty.**

The Four Cylinder Engine **in high-powered cars** is going—it started to go last year—is going faster this year—will go still faster next year—and in eighteen months will be where the rear entrance tonneau and the high-powered two cylinder cars are today—"Down and Out."

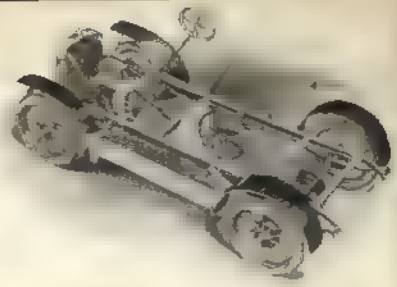
And the man who buys **a high-priced** four cylinder car now will get -how much do you think?—about a year from now when he tries to get rid of it because he wants a **STEVENS-DURYEA "SIX"**—how much did **you** realize on your **TWO CYLINDER CAR** when you sold it to get a **"FOUR"?**

STEVENS-DURYEA CO.

700 Main Street

Chicopee Falls, Mass., U. S. A.

Member A. L. A. M.



CARTERCAR

CARTERCAR

NO GEARS TO STRIP—NO CLUTCH TO SLIP

Motorcar Co. **Detroit, Mich.**

CRAWFORD

MODEL E., 35 H. P., $2500. *(Illustrated)*

MODEL F., 50 H. P., $3000.

The Crawford Model E,—our leader—is a pronounced success. It is a car built for American road conditions, and possesses simplicity, power, strength and reliability in a marked degree. It is unequaled in grace of design and fine finish.

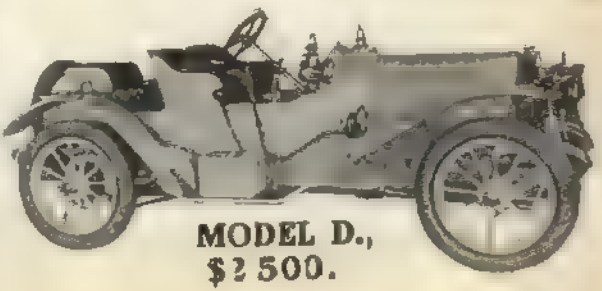
Model F is almost identical, except being slightly larger in every way.

Model D—Gentlemen's Roadster,—sells for $2500. It is built on racy lines, and will be found admirable for knockabout use.

Write for further particulars to

CRAWFORD AUTOMOBILE CO.

HAGERSTOWN, MD.



MODEL D., $2 500.

AMERICAN MORS

A CAR BUILT FOR PERMANENCE

The engine, chassis and every vital part of the American Mors is an exact duplicate of its famous French licenser.

Built by the largest builders of street cars in the world and backed by this unusual combination of French and American brains, the American Mors is conceded to be a triumph of structural solidity and a perfectly balanced car.

GUARANTEED FOR ONE YEAR

American Mors Touring Cars—Three Types

14-18 H. P., $3,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All Bodies of the Most Perfect Designs—Complete Equipment

Send for our Catalog. Address Dept. D

THE ST. LOUIS CAR COMPANY, Automobile Department, St. Louis, Mo.

NEW YORK: 1706-1718 Broadway, cor. 54th Street

Licensed by the Société Anonyme d'Electricité et d'Automobiles, "MORS," Paris, France

BUILT BY THE

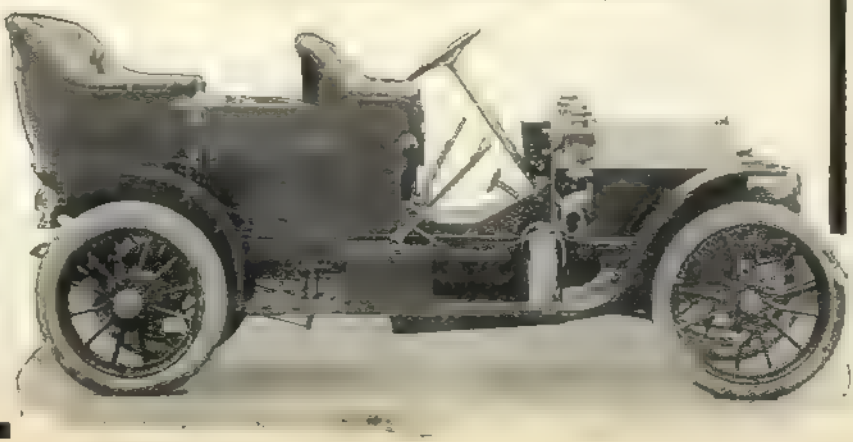
LARGEST BUILDERS OF STREET CARS IN THE WORLD

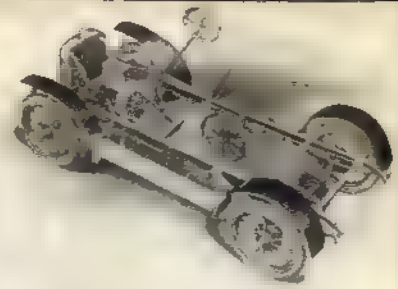
Moon The Most Up-to-Date Car in America

A stock Model C Moon made the fastest mile of the day at the Readville Track, Boston, Mass., May 30th, time being 1:07.

MOON MOTOR CAR CO., St. Louis, Mo.

Model C 30-35 H. P. $3500





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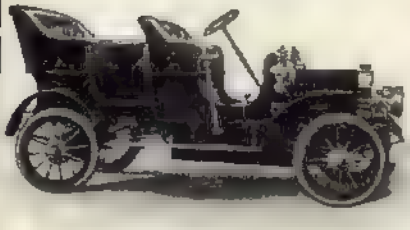


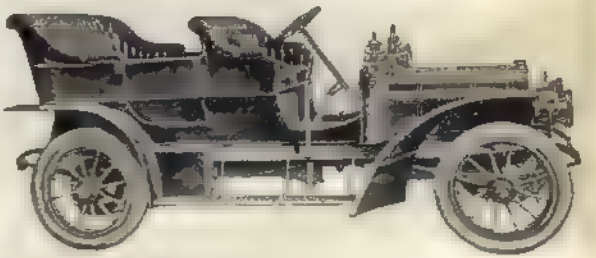
NO GEARS TO STRIP—NO CLUTCH TO SLIP

Motorcar Co. **Detroit, Mich.**

CRAWFORD

MODEL E., 35 H. P.,
$2500. *(Illustrated)*

MODEL F., 50 H. P.,
$3000.



Simplicity, power, strength and reliability,—the essential features of a motor car, are combined in a marked degree in the Crawford Model E, our leader. It is superb in design and finish, and is one of the best values on the market for the price.

MODEL F is practically the same car, only larger.

MODEL D,—Gentlemen's Roadster,—is a sturdy, powerful, serviceable car. It sells for $2500.00. If you want to handle a dependable car and a ready seller, write for our proposition.

CRAWFORD AUTOMOBILE CO.
HAGERSTOWN, MD.

THE "FULL JEWELED"

CORBIN

The car that surpasses your expectations, and our promises. From tire to tonneau there is not a particle of poor material to be found in it and the price is $2500.

CORBIN MOTOR VEHICLE CORPORATION

Member Association Licensed Automobile Manufacturers

New Britain, Connecticut

Racytype Mora Roadster

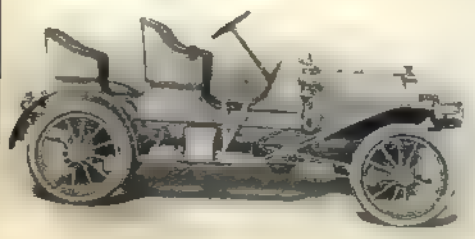
At Cleveland Hill Climb

Blew out two castings; but entered contest with two flat tires, and

LOST BY ONLY TEN SECONDS

Time of winner 1 minute, 18 3-5 seconds. MORA time 1 minute, 28 1-5 seconds
MORA made same hill previous day in 1 minute, 14 seconds

If you don't know the MORA *can* win "hands down," INVESTIGATE!



Write to-day for Catalog

Mora Motor Car Co.

17 MORA PLACE

NEWARK, NEW YORK

"MORA MAKES GOOD"

THE CARTERCAR

"THE CAR AHEAD"

In the "CARTERCAR" will be found the MINIMUM of MECHANISM thus eliminating most of the troubles encountered with automobiles. Experienced drivers will appreciate our claims of ABSOLUTE FREEDOM from TRANSMISSION TROUBLES, PERFECT CONTROL WITH ONE LEVER, avoidance of that jerky motion when starting or changing speed, and most important of all, no amount of rough handling will injure the friction transmission.

OUR CATALOGUE TELLS ALL ABOUT IT.

MOTORCAR COMPANY, Detroit, Michigan, U. S. A.

GARFORD PARTS

Makers of the Celebrated "Garford Chassis"

Steering Gear—pinion and sector type also supplied

Brake—made in 3 sizes

ALSO

Motor Wagon Parts

We can promptly execute orders for steering gears, brakes, sprockets, motor hangers and other parts for motor wagons. They are suitable for all classes of commercial power vehicles, from the lightest to the heaviest. They are not "freak" components of a wonder working vehicle. They enjoy the rare distinction of having been thoroughly tested for some years past in the most varied and severe kind of commercial service.

Circulars 2, 3, 5, 10 and 11 give information concerning them.

THE GARFORD COMPANY, Elyria, Ohio

Sales Manager, HAYDEN EAMES, Cleveland, O.

SIMPLICITY BEYOND PRECEDENT
A GREAT SELLING PROPOSITION

THE "ATLAS" RUNABOUT

AGENTS: can you find a more remarkable contrast to place before your customers? The **"Atlas"** has a 20 H. P., two cylinder, **two cycle** engine of only **Five** (5) moving parts (**think of it**), while the nearest 20 H. P., four-cylinder, four cycle competitor has **Sixty** (60) moving parts, and costs nearly $2000. Live territory still open.

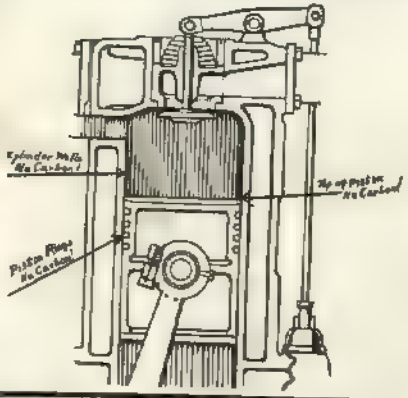
THE ATLAS IS BUT $1400

The Atlas Motor Car Co.

Harry A. Knox, President
SPRINGFIELD, MASS.

What becomes of your oil?

Sullivanoil won't carbonize—I can prove it.



Where does the oil go?

You have been done to death with the story of Carbon! Carbon! Carbon!

It's true, too!

The residue of oil is carbon—it's the ashes of the oil left on the walls of the cylinder after the heat burned the oil off.

And it's that carbon which forms in your cylinders that causes pre-ignition—and the knocking of your motor.

Some oils attempt to solve the problem by minimizing the amount of carbon formed

But the least amount will in time wear on your motor, gum the piston rings—clog up the spark plugs and play havoc with the best constructed engine ever built.

The only remedy was to find an oil that positively won't carbonate

I have found it in SULLIVANOIL

I have discovered the answer to the carbon question. I know how to get rid of carbon in oil, by a peculiar process in the making.

Because of the elements contained in Sullivanoil, the intense heat of the cylinders cause it to evaporate instead of burning up and forming carbon.

You have heard of the theoretical fire tests—here is my practical test

I poured a cylinder with Sullivanoil, took the car out for a 1000 mile run—then dismantled the motor and found there was not a particle of carbon on the walls of the cylinder and piston—not even on top of the piston. The spark plug was as bright as I clean it when I started

Does this look good to you if you are troubled with carbon?

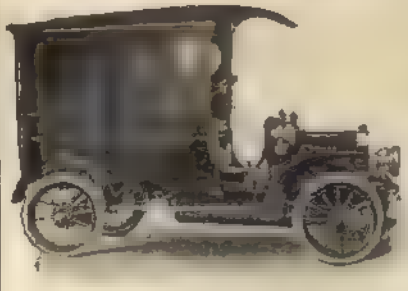
Use Sullivanoil and your Motor troubles will diminish

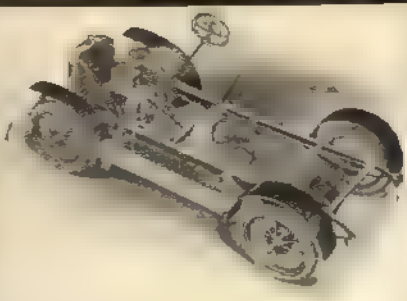
Mr. Tree Book "How to Test Oil" sent to any auto owner on request. It tells what you should know about lubrication

Write to me personally.

O. L. Sullivan

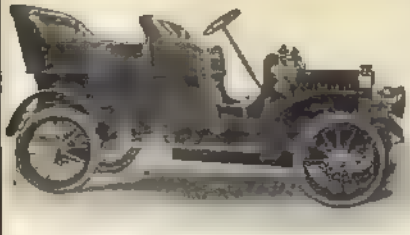
Maker of
SULLIVANOIL
50 Wells St. Chicago

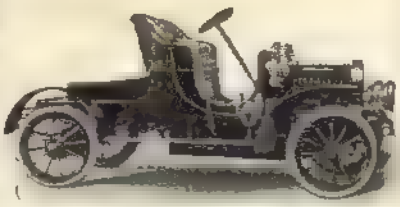




CARTERCAR

CARTERCAR

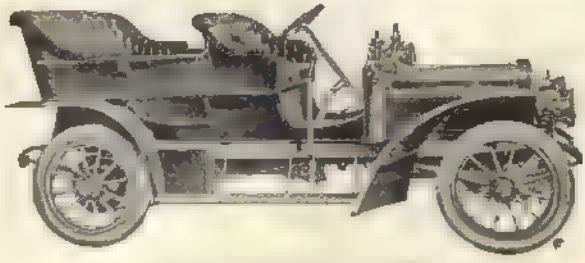




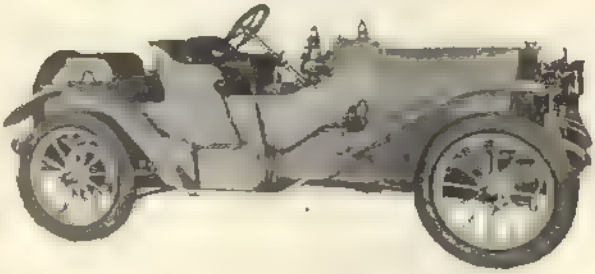
NO GEARS TO STRIP—NO CLUTCH TO SLIP

Motorcar Co. Detroit, Mich.

CRAWFORD



Model E., 35 H. P., $2500.
Model F., 50 H. P., $3000.



Model D., Gentleman's Roadster, $2500.

All the essentials of the perfect motor car are found in the CRAWFORD MODEL E. It has plenty of power, is simple in construction, strong and reliable. Its design and finish enable it to compare very favorably with cars costing a great deal more. You will make no mistake in buying the CRAWFORD.

The MODEL F is almost identical with Model E, being slightly larger in every way.

MODEL D, GENTLEMAN'S ROADSTER, is a car built on snappy, racy lines, and is just the thing for knockabout use.

CRAWFORD AUTOMOBILE CO.

HAGERSTOWN, MD.

CARTERCAR

CARTERCAR

NO GEARS TO STRIP—NO CLUTCH TO SLIP

Motorcar Co. Detroit, Mich.

SIMPLICITY

RELIABILITY

MODEL H, 35 H. P., $2,500.00

Motor—Four cylinder, 35 H. P., 4¾ x 6, water cooled, cast in pairs.
Clutch—Multiple disc running in bath of oil.
Transmission—Selective type, three speeds and reverse, no danger of stripping gears. All gears fitted to hexagon shafts, not keyed. Transmission fitted with Hess-Bright ball bearings.
Front Axle—I Beam, very strong.
Rear Axle—Bevel gear, floating type, wheels, clutch driven, relieving the driving shaft from all carrying strain.
Frame—Cold rolled pressed steel; steel pan under machinery.
Brakes—Two foot brakes external, on rear wheels. Two emergency, hand lever internal, on rear wheels.
Lubrication—Positive mechanical.
Color—Dark blue, light blue stripe.
Equipment—3 oil lamps, 2 gas lamps, generator, horn, storage battery and tools.
Tires—32 x 4 Diamond.
Speed—3 to 40 miles on high.
Wheel Base—106 inches.
Price—$2,500, f. o. b. Detroit.

PUNGS-FINCH AUTO CO., Detroit, Mich.

At the Grand Central Palace
New York City, Oct. 24th to 31st

We are exhibiting the following 1908 models of the

GREAT

Chadwick

SIX

Touring Cars, Tourabouts and Chassis

Look For Us

Space No. 21, Main Floor

As you enter the building turn right at first aisle and then go to the farthest aisle, then turn left. It is the third exhibit on the extreme right hand aisle of the building.

Chadwick Engineering Works
Spring Garden and 32nd Sts., Philadelphia, Pa.

The Great Chadwick Six

is the only BIG SIX CYLINDER CAR which in quantity has been in the hands of users a sufficient period of time to stamp it a finished and perfectly constructed six cylinder automobile in every detail of mechanical refinement.

We have been delivering quantities of

Great Chadwick Sixes Every Week

for many months to purchasers, all of whom are not only satisfied but are so favorably impressed that they regard this BIG SIX as the car which will endure for continuous service over a period of years.

WHY?

Because of its truly wonderful control and flexibility at every variation of motor speed, which is as smooth as steam but without the annoying complication and fluctuating power of the steam car, and with speed capabilities which will never cease to interest the man **who has nerve and ability to drive** and a keen sense of appreciation for mechanical perfection.

CHADWICK TOURABOUT. PRICE $5500

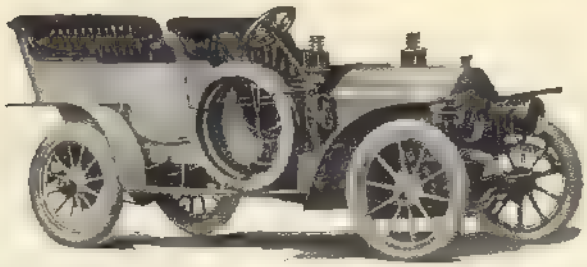
You're in Business for Big Sales--Good Profits --Delighted Patrons?

Then Get Busy With The Great

40-45 H. P. 1908

Cleveland

AT $3500!



As you value your success for the coming season and ensuing seasons as well, don't fail to get next to this selling sensation of the coming year.

Be sure you learn our proposition for the coming season. Write in now. Then look over this crackerjack car at the Grand Central Palace show, New York City, October 24th, to October 31st,—after *that*, after you see the new Cleveland, we'll leave it to you whether or not you can afford not to handle this triumphant car.

We hope you read the detailed specifications of this 40-45 H. P. model in the October number of this publication. If you didn't, it is well worth your while to turn back and read them through. We again desire to call your special attention to the following features: Ignition, lubrication, transmission, brakes and ratchet-sprag.

And don't forget that the 1908 Cleveland Chassis is distinctly our own product.

Ask For Our Sales Manager, At The Cleveland Exhibit At The Grand Central Palace Show, For Agency Rights

THE CLEVELAND MOTOR CAR CO.

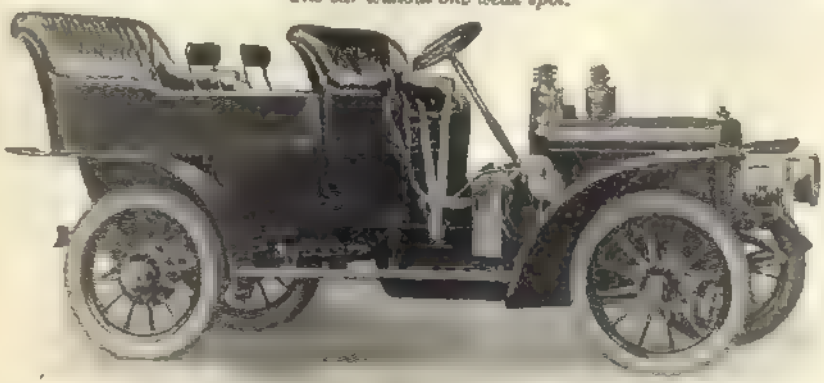
GENERAL OFFICE AND SALESROOMS

1659 Broadway, - New York City

The 30-35 H. P. Type H

Cleveland

"The car without one weak spot."



Type "H", 30-35 H. P., 7 Passenger Touring Car.

A consistently made car of uniform excellence that stands up to its work and can be depended upon to do it—at low cost of maintenance and repairs.

A Cleveland Owner is a Cleveland Rooter.
Examine the Cleveland at the nearest Cleveland agent.

WRITE TO DAY FOR THE 1907 CLEVELAND CATALOGUE

The Cleveland Motor Car Co.

Department 2

Cleveland, Ohio

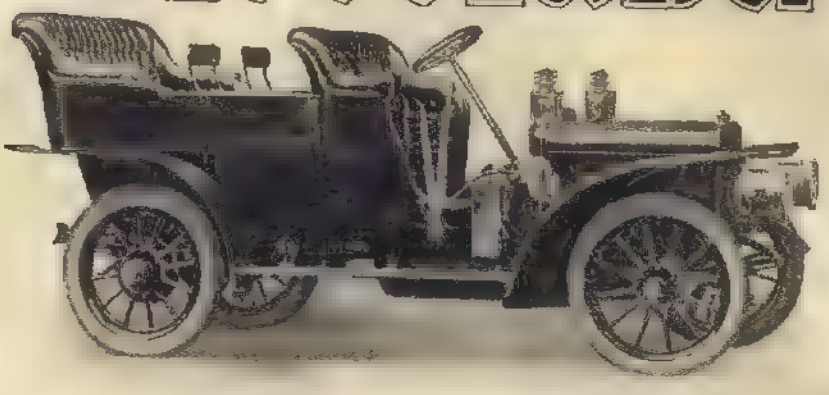
Every 1907 Cleveland will have on the front of the radiator the new Cleveland Emblem,—a cross of green enamel on a field of gold within a red circle. On the road,—look for the car with the Cleveland Cross, and you will see "The Car Without a Weak Spot".

DISTRIBUTORS:

NEW YORK—E. B. Gallaher, 223-30 West 58th Street, Eastern Distributor
BOSTON—Butler Motor Car Co., 906 Boylston Street.
PHILADELPHIA—Girard Motor Car Company, 936 North Broad Street.
PITTSBURG—Colonial Automobile Co., 55 [illegible] Street.
WASHINGTON, D. C.—Dupont Garage Company, 2020 M St., N. W.
NEW ORLEANS—Crescent City Auto Company, 417 South Rampart Street.
ST. LOUIS, MO.—Van Automobile Co., 4706-8-10 Washington Ave.
SO. CALIFORNIA—Lord Motor Car Co., 1044 South Main Street, Los Angeles, Cal.
NO. CALIFORNIA—J. W. Leavitt & Co., 44 Golden Gate Ave., San Francisco, Cal.
SEATTLE, WASHINGTON—C. W. Poole, 714 Sixth Ave.
MEXICO—Fernandez, Somellera & Stevens, Guadalajara, Jalisco.

The 30-35 H. P., Type H

Cleveland



Type "H", 30-35 H. P., 7 Passenger Touring, $4000

Our best argument for the CLEVELAND, Type H, 1907, is that its construction is essentially the same as the famous Type F, 1906. We couldn't make a stronger statement, as the model of 1906 proved conclusively to its owners that for efficiency in actual service, endurance, freedom from accident and economy in maintenance the CLEVELAND is in a class of its own.

In the CLEVELAND, Type H, 1907, no radical changes are shown—just a few developments insuring even greater dependability, greater comfort, greater running and climbing energy, and reducing to a minimum the cost of operation. This car that "proved itself" to its users in 1906 carries with it a like promise of service to every buyer in 1907.

The CLEVELAND proves itself from start to finish. Our low-tension make and break ignition, with imported Simms-Bosch Magneto, entirely removes the danger of ignition troubles.

Write us today for name of nearest CLEVELAND representative and 1907 Catalogue containing Mr. Walter Hale's beautifully illustrated story of his recent motor trip from Gibraltar to the coast of Normandy.

THE CLEVELAND MOTOR CAR COMPANY

Department 2 **Cleveland, Ohio**

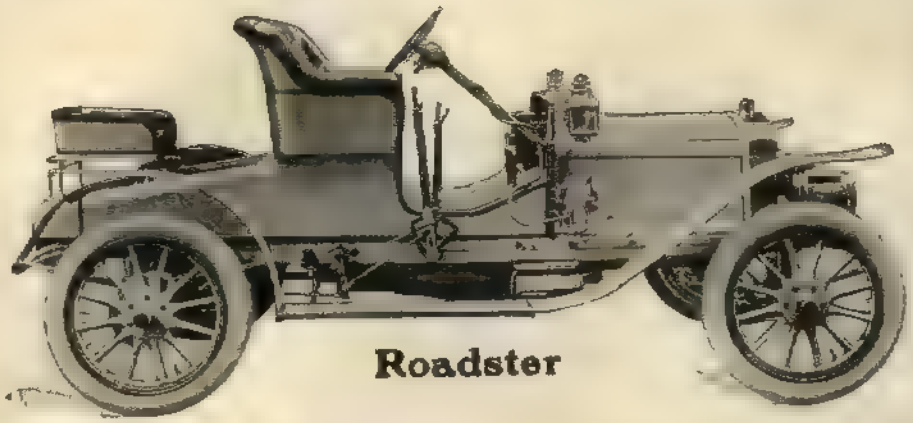
Chicago Branch, 1470 Michigan Avenue.

Every 1907 Cleveland will have on the front of the radiator the new Cleveland Emblem—a cross of green enamel on a field of gold within a red circle. On the road, look for the car with the Cleveland Cross, and you will see "The Car Without a Weak Spot"

DISTRIBUTORS:

NEW YORK—E. R. Gallaher, 248-250 West 58th Street, General Eastern Distributor
BOSTON—Eastern Motor Car Co., 909 Boylston Street.
PHILADELPHIA—General Motor Car Company, 246 North Broad Street.
WASHINGTON, D. C.—Depot Garage Company, 2020 M. St., N. W.
PITTSBURGH—Colonial Automobile Co., 5518-20 Walnut Street.
NEW ORLEANS—Crescent City Auto Company, 217 South Rampart Street.
SO. CALIFORNIA—Lord Motor Car Co., 1044 South Main Street, Los Angeles, Cal.
NO. CALIFORNIA—J. W. Leavitt & Co., 441 Golden Gate Ave., San Francisco, Cal.
MEXICO—Fernandez, Sontellera & Stevens, Guadalajara.

Dorris 1907 Dorris



Roadster

30 Horse Power **Price $2,500**

Touring Car

Three Point Suspension **Wheel Base 102**

Price $2,500

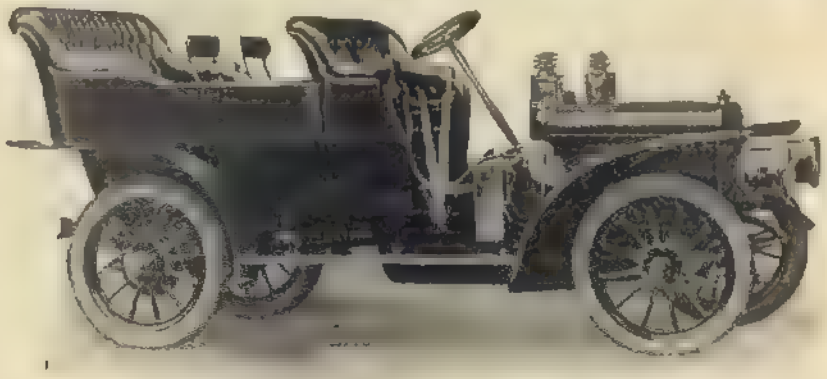
Dorris Motor Car Co.

St. Louis, Mo.

The 30-35 H. P. Type H

Cleveland

"The car without one weak spot."



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The Cleveland Motor Car Co.

Department 2

Cleveland, Ohio

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DISTRIBUTORS:

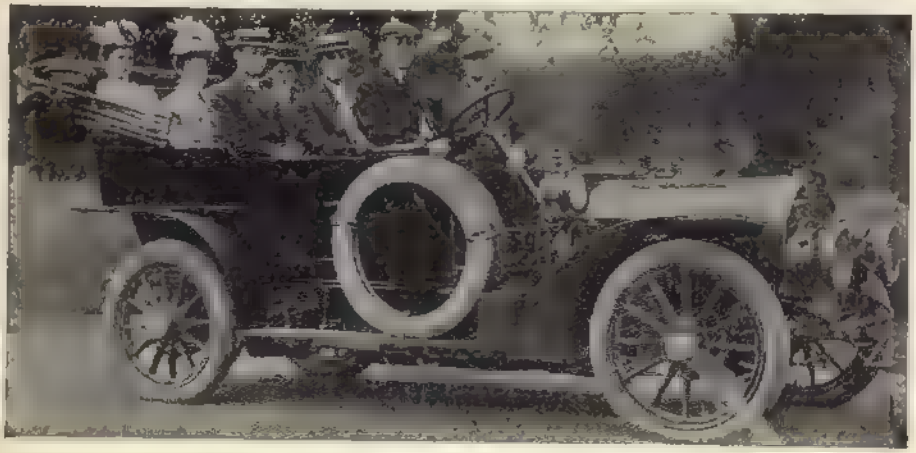
NEW YORK—E. R. Gallaher, 328-30 West 58th Street, Eastern Distributor.
BOSTON—Butler Motor Car Co., 998 Boylston Street.
PHILADELPHIA—Girard Motor Car Company, 255 North Broad Street.
PITTSBURG—Colonial Automobile Co., 5518-20 Walnut Street.
WASHINGTON, D. C.—Colonial Garage Company, 915 M Street, N. W.
NEW ORLEANS—Crescent City Auto Company, 2[illegible] St. Charles Street.
ST. LOUIS—Motor Vehicle Co., 4006-8 Washington Ave.
SOUTHERN CALIFORNIA—Lord Motor Car Co., 1044 South Main Street, Los Angeles, Cal.
NORTHERN CALIFORNIA—J. W. Leary & Co., 445 Golden Gate Ave., San Francisco, Cal.
SEATTLE, WASHINGTON—C. W. Poole, 714 Second Ave.
MEXICO—Fernandez, Somellera & Stevens, Guadalajara, Jalisco

The 1908 Columbia

Electric Transmission Touring Car

7-Passengers :: 7-Speeds :: 5-Brakes

No Speed Change Gears.
No Clutch. No Hand Levers.
No Noise. No Trouble. No Up-keep Costs.
The Only Car with Seven Speeds.
The Only Car with Five Brakes.
The Only American Electric Transmission.
Perfect Control with Perfect Certainty.



A Large Car, Elegant Lines.
Best Materials. Highest Finish.
Speed—Silence—Luxury.
No other car in the world has so simple, certain and economical a transmission system.
95 per cent. efficiency on high speed.
7 passengers—60 horse power—7 speeds.
Price, $6500.

ELECTRIC VEHICLE COMPANY, Hartford, Conn.

NEW YORK BRANCH: Electric Vehicle Company, 134-136-138 West 39th Street.
CHICAGO BRANCH Electric Vehicle Company 1332-1334 Michigan Avenue.
BOSTON. The Columbia Motor Vehicle Company, Trinity Place and Stanhope St.
MEMBER A. L. A. M.

A NEW Columbia 7 Passenger MOTOR CAR With ELECTRIC TRANSMISSION

Electricity is not a prime power agent, yet as a means of transmission and control of power it has supplanted all other methods in steam railroads, street railroads, warships, factories, etc., and in the new high powered 7 passenger gasoline car electricity has supplanted all friction clutch, gear boxes and shifting levers.

Also: the light Columbia touring car, runabout and limousine has many and important improvements for 1908

We Exhibit at Madison Square Garden A. L. A. M. Show

Electric Vehicle Company

Hartford, Connecticut

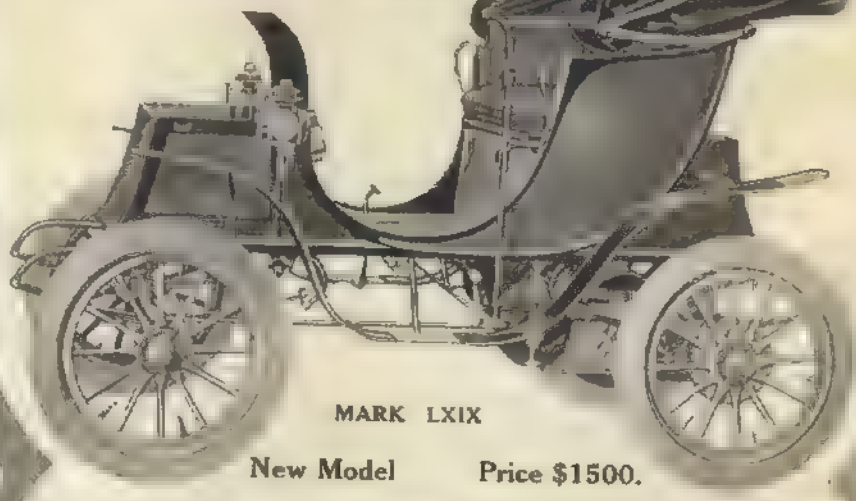
New York: 134-136-138 W. 39th Street

Member A. L. A. M.

SIMPLICITY-SAFETY-RELIABILITY
1908
MODEL
Neverout
"PATENT INVERTIBLE SYSTEM
OF GAS PRODUCTION
For Lighting Motor Cars and Boats.
"Universally Acknowledged The Highest Achievement of the Mechanic Arts"
ROSE MANUFACTURING COMPANY
New York Branch 107 Chambers Street
911 ARCH STREET, Philadelphia, U. S. A.

Columbia

Electric Victoria Phaeton



MARK LXIX

New Model **Price $1500.**

THE attention bestowed upon this car at the New York Automobile Show caused it to be regarded as the sensation of the Electric Section.

In dependableness, simplicity of operation, safety, comfort, superb finish, graceful proportions, smartness of style and, above all, in radius of reliable action, this Victoria phaeton is without a peer among light electric vehicles.

In actual road tests it has been run upwards of 75 miles on one battery charge. The mileage has never been equalled by a regular stock electric of any other make.

Since the first model was presented three years ago, this carriage has been the most popular light electric. It is a special favorite with physicians and no other is so perfectly adapted to ladies' use. Its control is so simple that a child can run it with perfect safety. The other Columbia Electrics—Broughams, Hansoms, Landaulets and large Victorias, are equally desirable in their class and are to be seen in greater numbers on all of the fashionable boulevards of the world than any other electric carriages built. Catalogue on request. Also separate catalogue of Columbia 24-28 H. P. and 40-45 H. P. Gasoline cars.

ELECTRIC VEHICLE COMPANY, Hartford, Conn.

New York Branch: Electric Vehicle Co. 134-136-138 W. 39th St. Chicago: Electric Vehicle Co., 1332 Michigan Ave. Boston: The Columbia Motor Vehicle Co. Trinity Place and Stanhope St. Washington: Washington R. V. Trans. Co., 13th St. and Ohio Ave. San Francisco: Middleton Motor Car Co., 550 Golden Gate Ave. Member A. L. A. M.

Columbia

Motor Cars. Gasoline and Electric

Can be depended upon for consistent and satisfactory performance at all times. This with their unusually low cost of maintenance makes them the most desirable cars in the 1907 market.

Mark XLIX

Mark XLVIII, 24-28 H. P., Touring Car $3000, Limousine $4200, is the most complete and perfect medium powered car to be had.

Mark XLIX, 40-45 H. P., Touring Car $4500, Limousine or Landaulet $5500, presents an unrivalled combination of speed, power and luxury.

Mark LXIX, Electric Victoria-Phaeton, $1600, is unapproached in its class for radius of reliable action, safety, comfort, smartness of style and superb finish.

Mark LXVIII, Electric Brougham, Landaulet, Hansom and Victoria, each $4000, are universally acknowledged to be the ideal town carriages for private service.

Separate catalogues of gasoline and electric models will be sent on request.

ELECTRIC VEHICLE COMPANY

HARTFORD, CONN.

NEW YORK BRANCH - - - Electric Vehicle Company, 134-136-138 West 39th Street
CHICAGO BRANCH - - - - Electric Vehicle Company, 24[illegible] Michigan Avenue
BOSTON - - - The Columbia Motor Vehicle Company, Trinity Place and Stanhope Street

Member A. L. A. M.

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CHICAGO BRANCH - - - - - Electric Vehicle Company, 1338 South Michigan Avenue
BOSTON - - - - - The Columbia Motor Vehicle Company, Trinity Place and Stanhope Street

Member A. L. A. M.

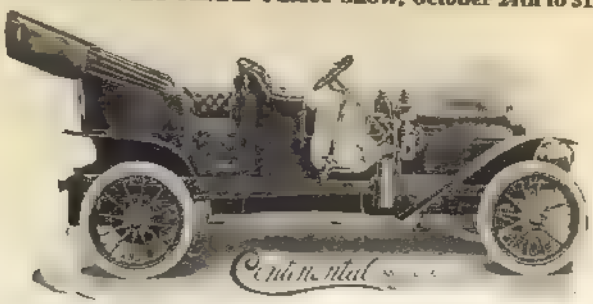
THE CAR THAT'S MADE GOOD
IN EVERY PARTICULAR

Continental Cars For 1908 Now Ready

BUILT IN NEW HAVEN BY

THE CONTINENTAL AUTO MFG. CO.

Will exhibit at Grand Central Palace Show, October 24th to 31st only.



UNDOUBTEDLY THE BEST PROPOSITION EVER OFFERED THE AUTOMOBILISTS

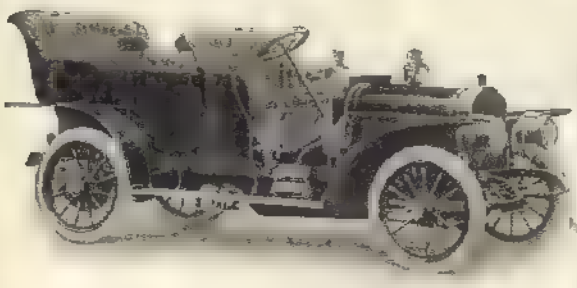
This Agency is Dealers Most Valuable Asset

Best Car at the Price and as Good as Any Car at Any Price

Three Models, $2400.00 to $3500.00

We wish to impress upon the public that we have never built any special Cars for any of the various prominent events in which the Continental has won prominent places in all endurance runs New York to Albany, the Sealed Branch Contest, Glidden Tour, and Bridgeport hill climb and 24 hour races Cars winning have been regular stock cars in every detail

Western Agents: MIDLAND SUPPLY CO., 1918-20 Michigan Avenue, Chicago, Ill.



GAETH

1908 Model. Type XV.

$3500.00

4 Cylinders, 4⅜ x 5¼. Wheel Base 112 in
H. P. 35-40. " Diameter 34x4 in.
Ignition Double—Low Tension Magneto and Batteries.

SPECIAL GAETH FEATURES.

Low tension ignition embodying the simplest make and brake device ever produced. A mechanically operated carburetor which in many recent tests has shown remarkably low gasoline consumption. Water cooling by thermo syphon system without pump, the simplest, most effective system known. Contracting band clutch, permitting regulation by a single adjustment.

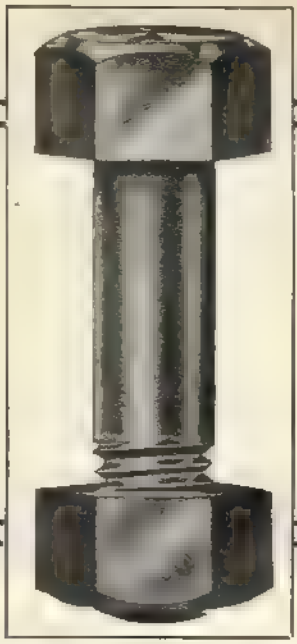
The Gaeth for 1908 with added refinement is the same as our 1907 model which made a perfect mechanical score in the Glidden Tour and was the only car to make a perfect score in the Cleveland Reliability Contest.

We want live agents in about eight or ten towns

Write us **now** and look for our exhibit at the New York Show.

THE GAETH AUTOMOBILE WORKS,
CLEVELAND, OHIO.

GUARANTEED
TO
A.L.A.M. STANDARD
HEXAGON HEAD SCREWS NUTS, Etc.



Have large supply of **Special Material**; also **Special Taps** and **Gauges** on hand to make

PROMPT DELIVERIES

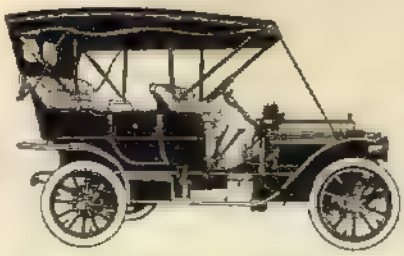
Send us your Specification

DETROIT SCREW WORKS
DETROIT, MICH.

Standard Set and Cap Screws, Steel Taper Pins, Coupling Bolts, Nuts, Etc.

"ANYTHING TURNED FROM BAR"
HARDENED and GROUND WORK OUR SPECIALTY

SETTING A NEW STANDARD for $2500 CARS



WAYNE

THIRTY FOR 1908

$2500 F. O. B. Factory

"Nothing to buy but the License."

Heretofore the man who bought a car costing $2500 has been content to get along without certain advantages of operation which he might enjoy in a car of higher price.

The perfected Wayne for 1908 does not ask you to do without a single point of efficiency—efficiency of the highest degree and the most perfect results

In short the Wayne greeting to you for 1908 is plainly this: If the Wayne lacks any element which you can find in any car of the same class at a higher price—pay the higher price.

This car with its improvements and betterments, at the price, shows a development in automobile manufacture which a few seasons ago would have been regarded as impossible of fruition.

With such an assurance of extraordinary service at $2500—you certainly will not buy before you have given the Wayne a competitive demonstration with the best other cars built at the same or approximate price.

The Wayne Automobile Company
Dept. E. :: DETROIT, MICH.

Will exhibit only at the "All America" Show, Grand Central Palace, N. Y., Oct. 24 to 31.

The "COUPLE-GEAR" ELECTRIC-TRUCK

Motors Contained in the Wheels
Single Reduction of 25 to One

The Wonderful Efficiency Of This New Mechanical Means Has Been a Revelation to Students of Transmission.

The Power is applied to both sides of the wheel at the rim and the wheel is turned in the same manner as you wind a watch with the thumb and finger. (The principle involved is known in mechanics as "Couple-Action," from whence we take our name.)

The Entire energy of the Motor is converted into useful propelling force, giving the **Couple-Gear Truck Ample Mileage** for every condition of service. (The mechanical transmission efficiency exceeds 97% at normal load for the motors.)

Five Ton Trucks, Driven and Steered by **All Four Wheels,** Operate equally as well in either direction.

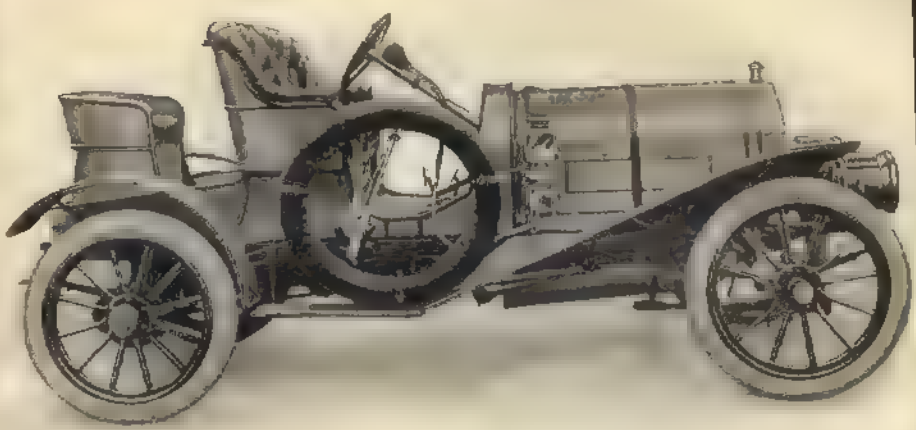
One and Two Ton Trucks, Front Wheel Drive and Steer. Rear wheels large diameter with steel tires or 36 inch Dummy wheels with rubber tires.

See Our Exhibit at the Commercial Vehicle Show, Chicago, Nov. 30 to Dec. 7

RESPONSIBLE AGENTS WANTED

Couple-Gear Freight-Wheel Co.
GRAND RAPIDS, MICH.

Craig Toledo



$4,000.00

F. O. B. FACTORY

A car of such manifest and extraordinary excellence—a chassis so costly—that it will upset all your previous notions of which is really the finest car made in America. We urge upon you nothing but this ride in the Craig-Toledo. We will abide by the results.

The Craig-Toledo Motor Co.

TOLEDO, OHIO.

Holsman

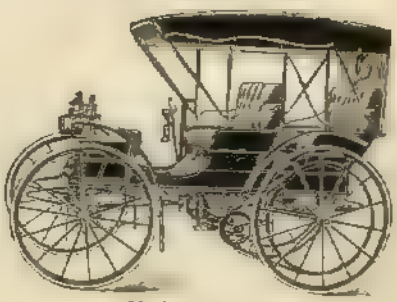
Fifth Year of Success

MODEL No. 3

MODEL No. 10

Perfect Score in Chicago Reliability Run

MODEL No. 9



MODEL No. 11

First Place in Light Touring Class

THE HOLSMAN AUTOMOBILE CO.

Room 602, Monadnock Block, CHICAGO, ILL.

325 Miles Continuous Running Through Snow, Mud and Ice on the High Gear in 12 Hours and Forty Minutes!

And Not a Drop of Oil or Water Put Into The Machine During The Whole Remarkable Run!

Only an instance of what the new Craig-Toledo is doing almost every day in the year. Only an instance of what you may expect in the first Craig-Toledo you see and the Craig-Toledo you buy.

This is the World's record for a lengthy run on the high gear—but that is not particularly important.

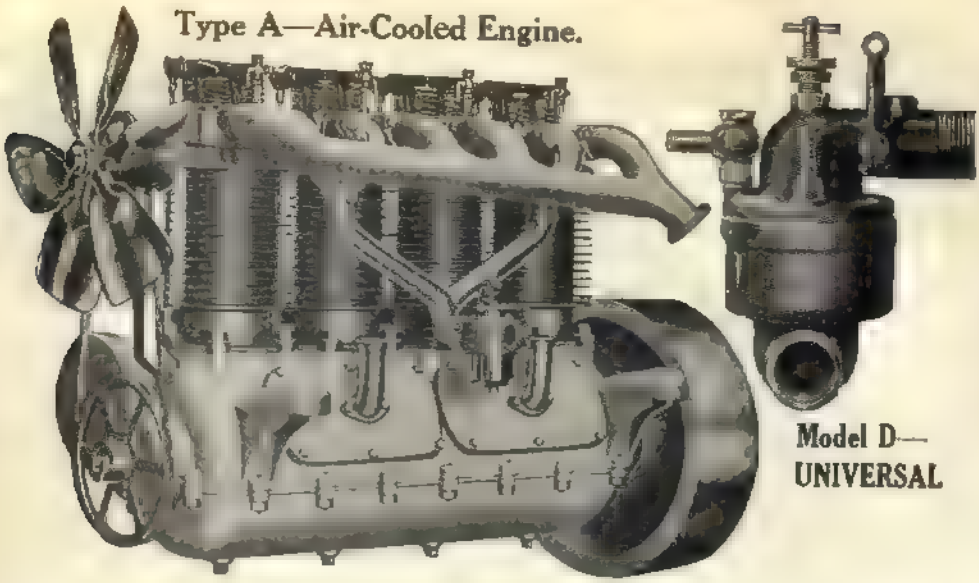
The point is that this terrific trip illustrates the extreme flexibility and superiority of the Craig-Toledo power plant which is mounted on a patented three point suspension.

Why not inquire further into the merits of this light, speedy, sturdy Roadster?

Write to

The Craig-Toledo, $4,000.00

THE CRAIG-TOLEDO MOTOR COMPANY, TOLEDO, OHIO



4" Bore, 4" Stroke, 20-24 H. P.

The heavy demand for this particular type of **Carrico Engine** leads us to urge those who are considering the use of it in 1908 Models to act quickly. Our output is rapidly being contracted for. Catalogs, Blue-Prints, and Quotations furnished to responsible manufacturers on request.

THE CARRICO HAS A WONDERFUL RECORD

In Three Years,

Not One Delay In Deliveries.
Not One Engine Sent Back.

Air Cooled or Water Cooled

That's up to you. We make both types and make them equally well.

Here Are Some of the Users:

Hay-Berg Motor Car Co.,
Milwaukee

H. E. Wilcox Motor Car Co.,
(Wolf Cars) Minneapolis.

Victor Automobile Co.,
Ridgeville, Ind

Logan Construction Co.,
(Logan Runabouts) Chillicothe, O

Buckeye Motor Car & Machine Co.,
(Buckeye Cars) Columbus, O.

Sayres & Scoville,
(Trucks) Cincinnati, O.

THE PERFECT CARBURETOR

Read These Claims and Give us a Chance to Prove Them to You!

Below we make several statements of unusual importance to automobile makers and owners alike. These statements are neither exaggerated nor too conservative—they are absolute, exact facts, and we seek the opportunity to prove them precisely as they are stated:

Model D—Universal

Is the simplest, most effective carburetor ever devised

It gives a better mixture, yet a more economical mixture, than any other carburetor.

It gives the greatest mileage per gallon of fuel.

It is equally effective at all altitudes and in all temperatures.

It gives a perfect gas supply on the steepest grades and around curves.

It has fewer parts than any other carburetor, is easily cleaned and easily understood by an amateur.

It is equally effective on two or four cycle engines.

This is precisely the sort of carburetor you have been hoping would some day be made. You will appreciate what it means and we will appreciate your request for straightforward, convincing proof

SPEED CHANGING PULLEY COMPANY

754 Washington St., Indianapolis, Ind.

Pacific Coast Distributors: I. H. & B. I. Bill, 132 Valencia St., San Francisco, Ca.; John T. Bill & Co., Los Angeles, Cal

Agents: Pierson Motor Supply Co., 1175 Bedford Ave., Brooklyn, N. Y. Phoenix Auto Supply Co., 3932 Olive St., St Louis, Mo. I. H. Whipple, 260 W. Jackson Blvd., Chicago, Ill. The Gas Engineering Co., (Sales Office) Philadelphia, Pa.

325 Miles Continuous Running Through Snow, Mud and Ice on the High Gear in 12 Hours and Forty Minutes!

And Not a Drop of Oil or Water Put Into The Machine During The Whole Remarkable Run!

Only an instance of what the new Craig-Toledo is doing almost every day in the year. Only an instance of what you may expect in the first Craig-Toledo you see—and the Craig-Toledo you buy.

This is the World's record for a lengthy run on the high gear but that is not particularly important.

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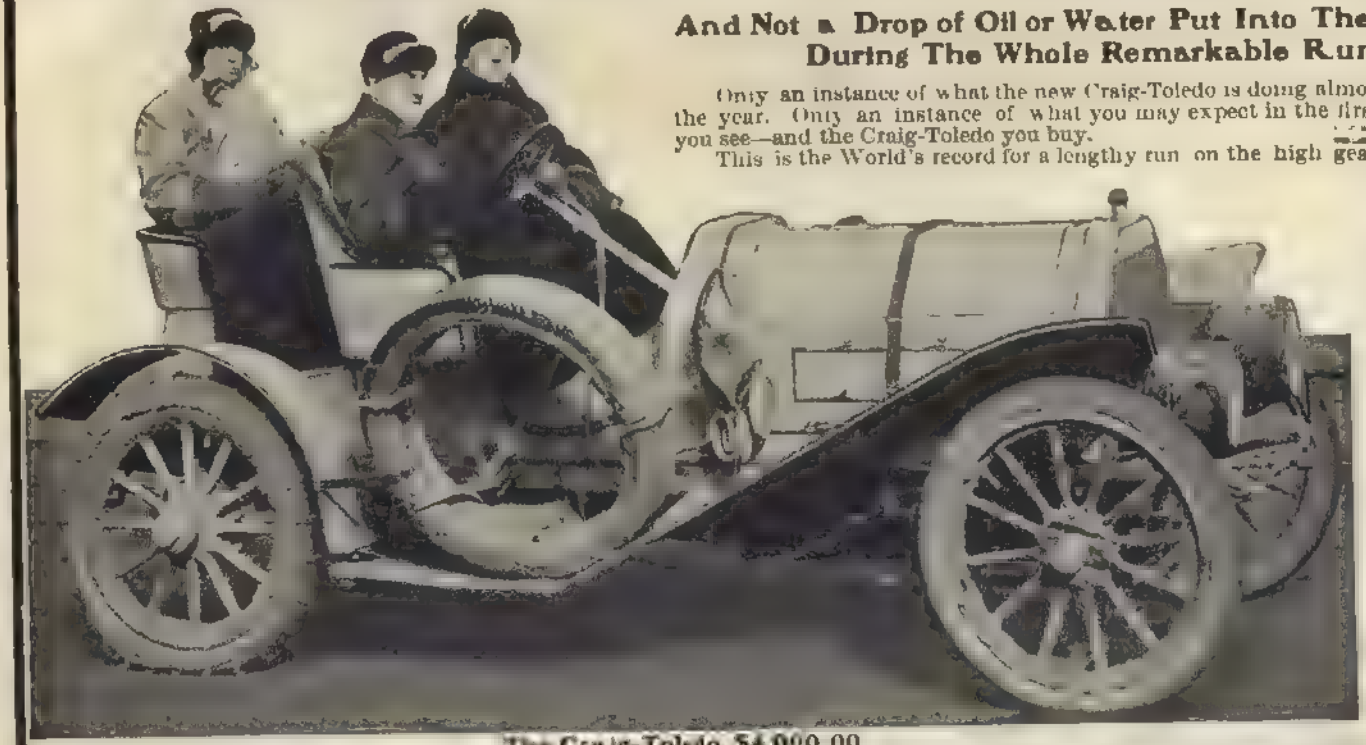
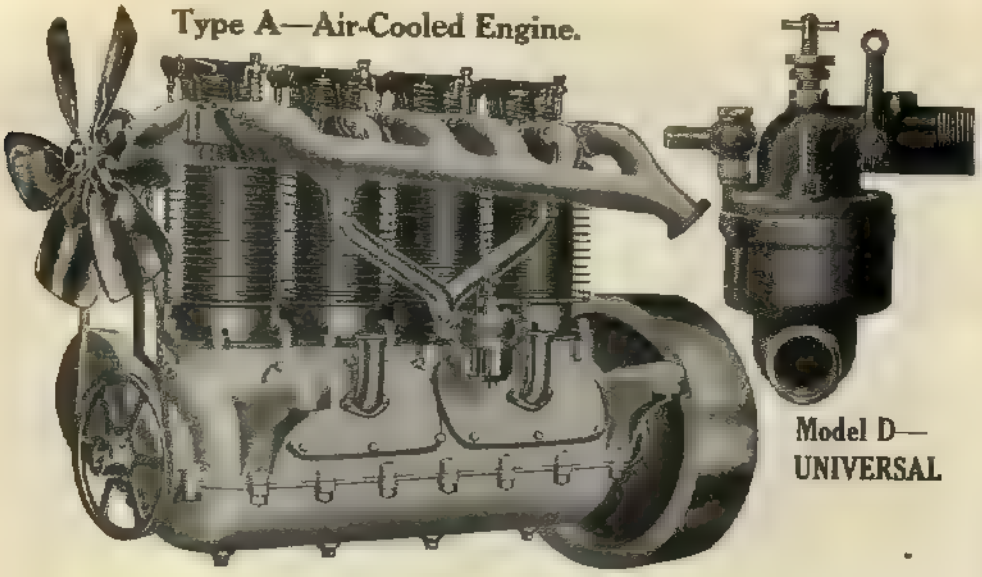
Why not inquire further into the merits of this light, speedy, sturdy Roadster?



The Craig-Toledo, $4,000.00

Write to

THE CRAIG-TOLEDO MOTOR COMPANY, TOLEDO, OHIO



4" Bore, 4" Stroke, 20-24 H. P.

The heavy demand for this particular type of **Carrico Engine** leads us to urge those who are considering the use of it in 1908 Models to act quickly. Our output is rapidly being contracted for. Catalogs, Blue-Prints, and Quotations furnished to responsible manufacturers on request.

THE CARRICO HAS A WONDERFUL RECORD

In Three Years,

Not One Delay In Deliveries.
Not One Engine Sent Back.

Air Cooled or Water Cooled

That's up to you. We make both types and make them equally well.

Here Are Some of the Users:

Hay-Berg Motor Car Co.,
Milwaukee.

H. E. Wilcox Motor Car Co.,
(Wolf Cars) Minneapolis.

Victor Automobile Co.,
Ridgeville, Ind

Logan Construction Co.,
(Logan Runabouts) Chillicothe, O

Buckeye Motor Car & Machine Co.,
(Buckeye Cars) Columbus, O.

Sayres & Scoville,
(Trucks) Cincinnati, O.

THE PERFECT CARBURETOR

Read These Claims and Give us a Chance to Prove Them to You!

Below we make several statements of unusual importance to automobile makers and owners alike. These statements are neither exaggerated nor too conservative they are absolute, exact facts, and we seek the opportunity to prove them precisely as they are stated:

Model D—Universal

Is the simplest, most effective carburetor ever devised

It gives a better mixture, yet a more economical mixture, than any other carburetor.

It gives the greatest mileage per gallon of fuel

It is equally effective at all altitudes and in all temperatures.

It gives a perfect gas supply on the steepest grades and around curves.

It has fewer parts than any other carburetor, is easily cleaned and easily understood by an amateur

It is equally effective on two or four cycle engines.

This is precisely the sort of carburetor you have been hoping would some day be made. You will appreciate what it means and we will appreciate your request for straightforward, convincing proof.

SPEED CHANGING PULLEY COMPANY

754 Washington St., Indianapolis, Ind.

"Pacific Coast Distributors:" L. H. & B. I. Bill, 133 Valencia St., San Francisco, Cal. John T. Bill & Co., Los Angeles, Cal.

Agents Pierson Motor Supply Co., 1175 Bedford Ave., Brooklyn, N. Y. Phoenix Auto Supply Co., 3932 Olive St., St Louis, Mo. I. H. Whipple, 260 W. Jackson Blvd., Chicago, Ill. The Gas Engineering Co., (Sales Office) Philadelphia, Pa.

CORBIN

Important to Dealers and Agents

We are now appointing agents for 1908 for the "full-jeweled" Corbin.

Get in line if you want a high-grade proposition, built and backed by the "House of Corbin," whose reputation for quality is world-wide.

Application for territory should be addressed to Sales Dept., E. H BRANDT, *Manager*

CORBIN MOTOR VEHICLE CORPORATION

Member of Association Licensed Automobile Manufacturers

New Britain, Connecticut

MODEL E

35 H. P.

$2500

(Illustrated)

MODEL F

50 H. P.

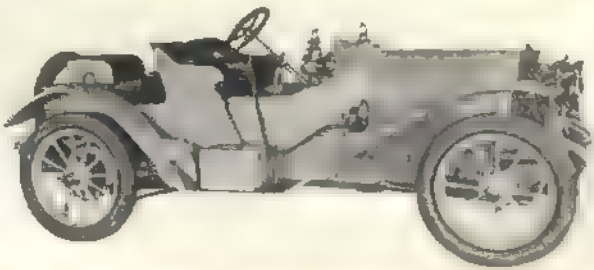
$3000

MODEL D

Gentleman's ROADSTER

$2500

Illustrated



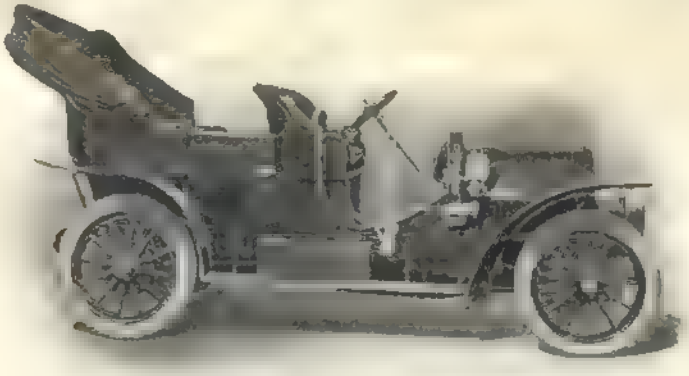
Model E is our leader. There is not a better car on the American market to-day, for the price. This may sound like a sweeping statement, but a careful examination, part for part will convince you of its truth.

The dealer who is anxious to handle a reliable dependable car, will find what he wants in the Crawford. Correspondence solicited

Crawford Automobile Co.

HAGERSTOWN, MD.

THE MOORE 40 H. P. CAR



Moore Touring Car with Victoria Top

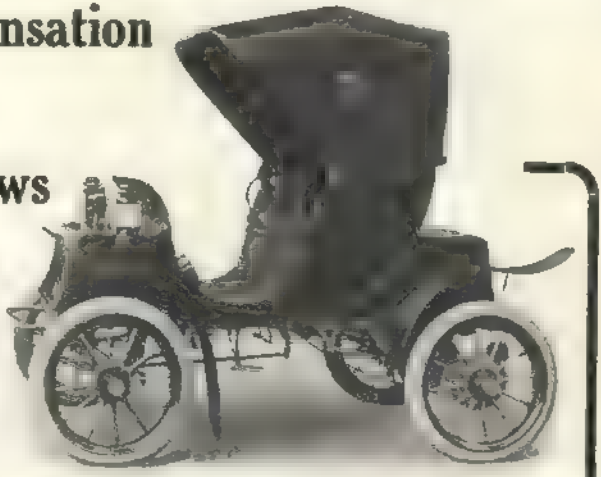
THE BALL BEARING CAR

The body is hinged at the back and can be lifted, giving access to all parts of the mechanism

MOORE AUTOMOBILE CO.

571 Fifth Avenue New York

The Greatest Sensation of all the Automobile Shows



The 1907 models are veritable triumphs. Chaste—dignified refined—an always evident superiority. A demonstration of engineering skill and manufacture that differentiates between Carriages made to serve and things made to sell.

An analytical examination of Baker construction reveals mineralogical science in the selection of materials used in various parts, and a comprehensive classifying according to use and wear—the greatest of all guarantees for service.

BAKER ELECTRICS

have attained an eminence in the craft that others have found impossible to reach. The Baker Carriages at all the shows have fairly monopolized attention and admiration.

There were more Bakers sold at the shows than of any other Electric Carriage. There must be a reason for this. It is found in the easily demonstrated superiority of the Baker—durability—finish—and riding qualities. Better motor, better control, better service of the battery.

Read the catalog as to mileage. We will not over-rate or over-state.

THE BAKER MOTOR VEHICLE CO. 18-80th Street N. W. CLEVELAND, OHIO

Crawford.

Model E., 35 H. P., $2500.
Model F., 50 H. P., $3500.

Model D., Gentleman's Roadster, $2500.

Don't judge the **CRAWFORD** automobiles by their cost, because they far outrank other makes listed at a corresponding price. They represent exceptional value and are high grade in every detail.

MODEL E is a thoroughly reliable family car that can be depended upon for satisfactory service 365 days in the year.

MODEL F is a powerful (50 H. P.) large touring car built on the same lines as the Model E and is a $5000 value for $3500.

MODEL D.—GENTLEMAN'S ROADSTER is a very pleasing model, built for rough use.

MODEL G is our shaft driven touring car. While we advocate the chain we nevertheless recognize that there is a certain demand for the shaft drive type of construction and have therefore perfected this feature in the Crawford Model G. In other details this car is like the well known and popular Crawford models. Motor, 4 cylinder 4 cycle, 5" bore and 5" stroke, 4 speeds forward and reverse; approximate speed 45 miles per hour on direct; geared up 27 per cent. on fourth speed. Price $3000.

If you want to handle "winners" for next year get the **Crawford** agency.

CRAWFORD AUTOMOBILE CO., Hagerstown, Md.

"Atlas" 1908 Lamps

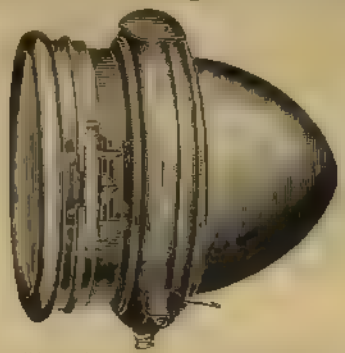
The New York Auto Lamp Co., 585 Washington street, New York City, is offering an extensive line of Atlas acetylene automobile lamps suitable for large touring cars, motor cars, runabouts, motor boats and launches. The lamps are marketed by the Wooster Auto Co., 88 Chambers street, New York City.

The "Atlas" Headlight, Model 14.

The "Atlas" Special, Model 12.

The lamps are made of 18 and 20 gage brass, best mirror and lenses. A feature of these lamps is a patent spring door fastening which obviates much trouble in opening and shutting the front door.

Model 14, here shown, is for large touring cars and motor boats. This lamp contains a generator. The height of the lamp is



The "Atlas" Improved Bullet, Model 11.

13¾-inch. It is fitted with a 2¼-inch lens. The price is $70 00; with bracket $80.00. This style is also made in a larger size known as model 15 which lists at $90.00, and with bracket $100 00.

The Alpha lamp, not shown, is made of heavy gaged brass, riveted thruout, and to withstand all sorts of wear. It is 11¾ inches high, 11¾ inches wide and 9½ inches deep, and is fitted with a 3-inch lens. The price is $28.00.

The Atlas "Special' is fitted with the best grade mirror lense, exactly focused and is suitable for the highest priced automobiles. The lamp is 13 inches high, 11¾ wide, 8½ deep and weighs 10½ pounds. It lists at $28 00

For runabouts and small cars this concern offers the Atlas Improved Bullet lamp Model 11. This lamp is 8¾ inches high, 7½ inches wide, 8¼ inches deep, and weighs 5¾ pounds. It lists at $15 00.

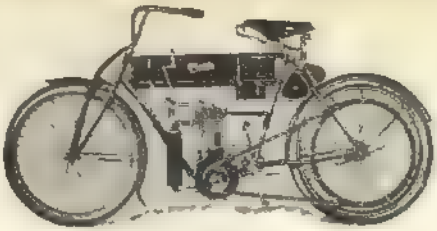
The Atlas Flare Front Searchlight is adapted specially for motor boats, launches and yachts. It is made up in different sizes from 6 to 9 inches. A feature of this lamp is a new method of ventilating, which makes it an impossibility to become overheated, thereby causing the glass or lens to break. This type is made with 6, 7 8 and 9-inch body, listing at $15.50, $17.00, $18.50 and $22.00 .

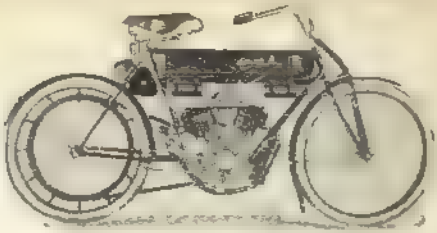
The "Saxon" Annunciator

The Saxon Lamp Co., 530 West Twenty-eighth street, New York City, has recently placed on the market the Saxon annunciator, to enable passengers of a closed car to communicate with the chauffeur.

The device is constructed of highly polished cast bronze, with inclined ruby glass on top, on which signals appear, simultaneously with the ringing of an electric bell. The box in which the push buttons are set is covered with morocco leather. Ten buttons or signals are provided. The device is fitted with a special 10 foot silk covered cable of rubber insulated wires, and lists at $50 per set.

F. A. Drake who succeeded J. W. Bowman, as manager of the Fisk Rubber Co.'s New York branch, has resigned that office.





Curtiss Motorcycles

win the principle events of the F. A. M National Meet, at Providence, R. I., including the Diamond Medal, highest award for double cylinder machines in the 300 mile endurance contest, demonstrating the superiority over other American and Foreign machines for reliability, hill climbing and economy, also winning speed trials for both single and double cylinder classes, making new world's record on single cylinder machine of one mile in 56 seconds. ¶ In addition to this the same single cylinder machine won hill climb event, and the double cylinder made fastest time in free-for-all.

Send for Catalog "A" which also describes light-weight air-cooled engines up to 40 H P

G. H. CURTISS MFG. CO. - - Hammondsport, N. Y.

The Reliance

Best Motor Cycle Proposition in the world :: :: ::

RELIANCE MOTOR CYCLE CO.
ADDISON, N. Y.

THE A. & J. MANUFACTURING CO.

Sole Manufacturers, THE ORIGINAL A. & J. Repair Hanger and Brazlron.

The best cast iron brazing compound.

Special motor cycle bracket and hanger for builders.

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Automobile Wrenches!

LOOK NO FURTHER!

Write for prices and samples of the Lightest, Strongest, most Serviceable, Tempered Steel Wrenches ever designed. Address

ONWARD COMPANY,
Formerly E. T. Harris
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CYCLE LAMPS

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Search-lights. Consult 20th Century

AUTOMOBILE LAMPS

THOMAS AUTO-BI MOTORCYCLES

Built for every day practical use by the average man.

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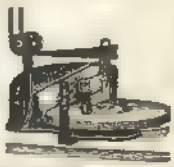
J. W. GRADY & CO.,
Selling Agents,
Worcester, - Mass.



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Automobile Supplies and Accessories

Keep us in mind for your next order.

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Three Buffalo motorcyclists traveling thru Canada and having 1000 miles to their credit, report most courteous treatment as no duty nor deposit was required of them.

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Seldom Equalled
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A winner wherever it competes.
Prompt deliveries guaranteed.
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MILWAUKEE, WIS.

INDIAN MOTORCYCLES
Hendee Mfg. Co.
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Best Motor Cycle Proposition
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IT ISN'T LUCK
That the
CURTISS Motorcycle

[illegible] entered in the Endurance Run won the Diamond Medal, the highest award for motorcycles under [illegible] for years, maintaining the best average for reliability, hill climbing and economy against a field of [illegible] other American and foreign makes.

It was LUCK that the Curtiss in the 30½ cubic inch class in the speed trials with heavier racers won the FIRST and SECOND, beating its nearest competitors, with equal [illegible] under separately timed and taking a WORLD'S RECORD by a mile in 56 4/5.

It isn't LUCK that in the 61 cubic inch class the CURTISS DOUBLE V INDEX won easily. And the same applies to the hill [illegible] and track events where the Curtiss machines fully demonstrate their superiority.

Write for our booklet "Achievements"

G. H. CURTISS MANUFACTURING CO.
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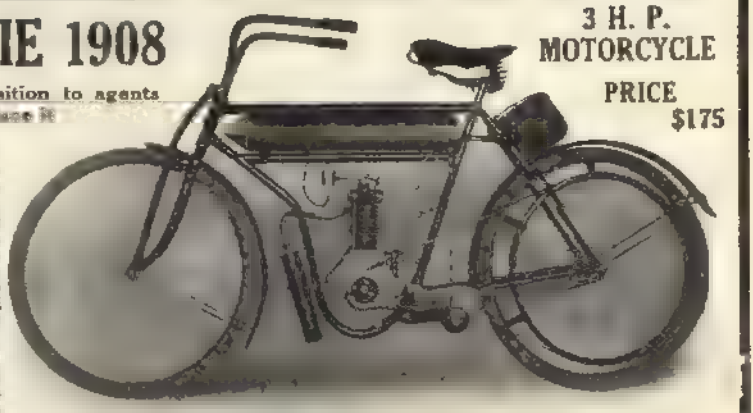
THE ERIE 1908
Most liberal proposition to agents
in introducing it

SPECIFICATIONS:
Stirrup foot rests [illegible]
[illegible] Curtiss [illegible]
[illegible] with bottle [illegible]
Wire [illegible] Control
Choice of tires and [illegible]
[illegible] ARRANGED FOR
[illegible] IMMEDIATE
DELIVERY [illegible]

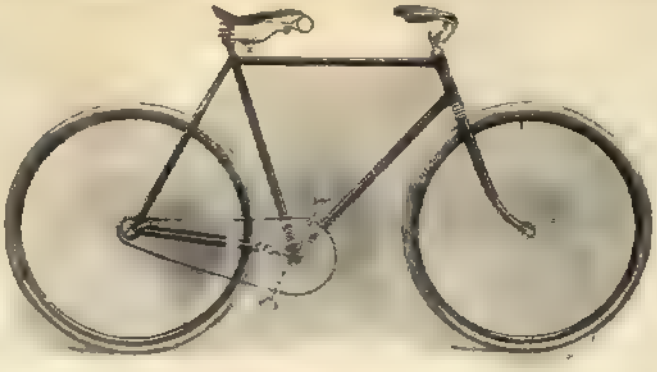
MOTORCYCLISTS
[illegible]

3 H. P.
MOTORCYCLE
PRICE
$175



Motorcycle Equipment & Supply Co., 4 Lake St., Hammondsport, N. Y.

1908 YALE AND SNELL BICYCLES

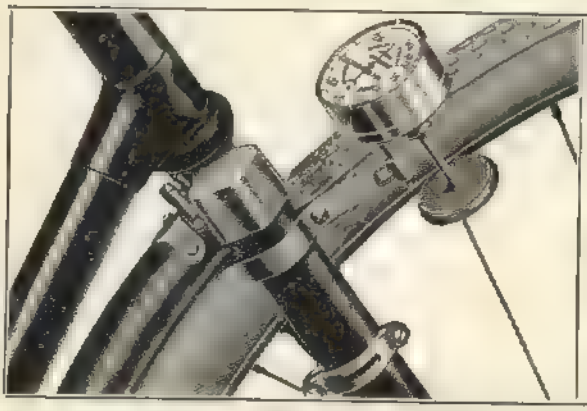


Product of the LARGEST Manufacturer of HIGH GRADE BICYCLES in the UNITED STATES. We have ALL satisfied agents and riders. They receive value for their money. Would you like to join our family?

A card will bring our catalogue.

The Consolidated Manufacturing Co.

STATION "B." **TOLEDO, OHIO.**



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The very best imported, **$10.00**

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ARE THE BEST. Mr. Dealer,

Specify them on your bicycles regardless of make.

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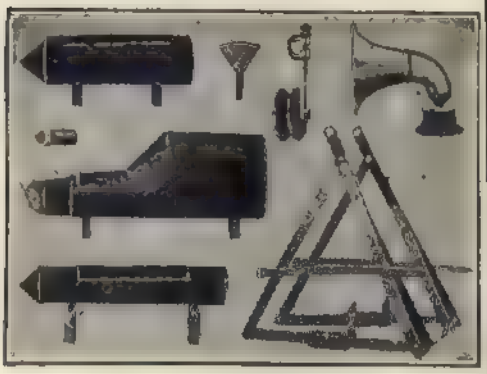

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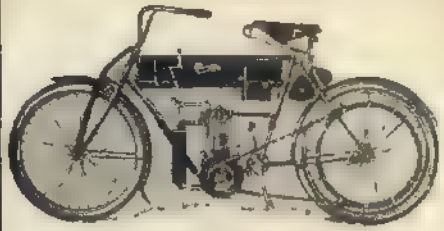

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Price $225.00

Liberal discount to dealers.

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SECONDHAND MOTORCYCLES $40.00 UP.

Write for list No. 125 of seventy machines

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Built entirely by us and guaranteed!

THE MERKEL MOTOR CYCLE 1907 MODEL—is the highest *type* of motor cycle construction on the market of today.

With its *Spring Frame* and *Spring Fork* it makes the easiest riding machine you could get.

POWER-SPEED-WEAR-PRICE!

MERKEL MOTOR CO.
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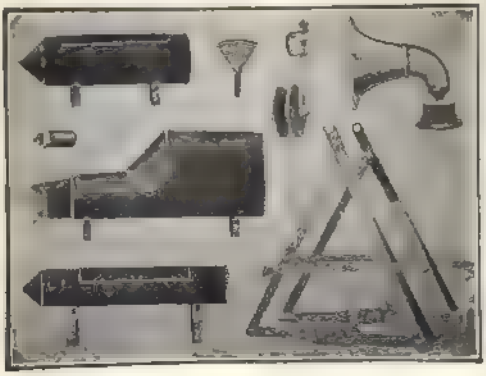

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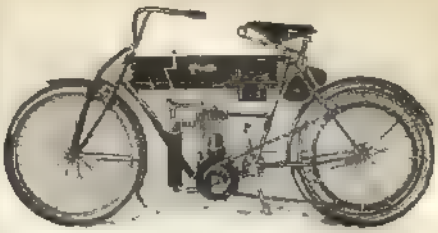

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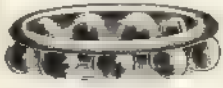

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THE SARTUS BALL BEARING CO.
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We express samples prepaid to manufacturers and jobbers on application.

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Be Sure That The Tire Equipment Is

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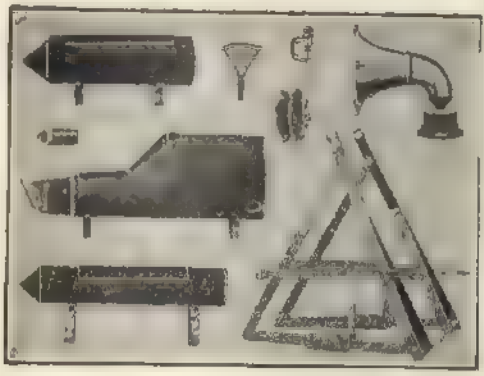
Indian and Yale Motorcycles
PARTS AND REPAIRS.



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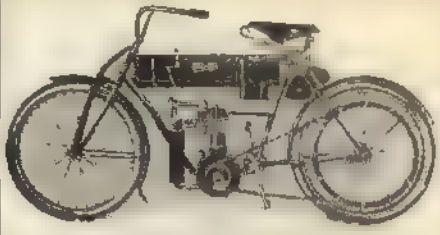

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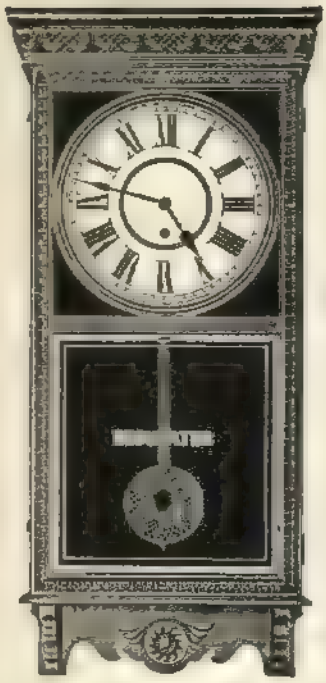
20 W. Randolph St., Chicago, Ill.

Mesinger New Cavalry Motor Saddle

Built on the style of a cavalry saddle on which the rider cannot slip forward or backward.

We express samples prepaid to manufacturers and jobbers on application.

H. & F. MESINGER MFG. CO.
1801-1807 First Ave., New York



FREE! FREE! FREE!

Regulator Clock.

WHY not get this thoroughly reliable, guaranteed Regulator Clock at once and have the benefit of it. We will send it to you entirely free for only 24 Neverleak Certificates. The clock is over 3 ft. high, 16½ in. wide, has solid oak case and 8-day movement. "Brass Sign" certificates will apply on clock. One certificate with each dozen 4 oz. tubes of Neverleak. Twelve certificates will entitle you to a Brass Sign as heretofore.

BUFFALO SPECIALTY COMPANY,

BUFFALO, N. Y.

GEER GREEN EGG MOTORCYCLE

5 H.P. Two-cylinder

Price $225.00

Liberal discount to dealers.

Old machines taken in exchange.

We furnish castings for eight different motors, 1¾ H. P. to 5 H. P., air and water-cooled. Our motor-cycle catalogue is one of the most complete ever issued. Write for copy.

SECONDHAND MOTORCYCLES $40.00 UP.

Write for list No. 125 of seventy machines

Harry R. Geer Company,

856 McLaran Ave., St. Louis, Mo.

Automobile Wrenches!

LOOK NO FURTHER!

Write for prices and samples of the **Lightest, Strongest, most Serviceable, Tempered Steel Wrenches** ever designed. Address

ONWARD COMPANY,

Formerly E. T. Hay

531 to 551 West 15th St., CHICAGO, ILL.

THE ORIGINAL.

THE SARTUS

Ball Retainer

(Brought Out in 1896)

BEST ANTI-FRICTION

THE SARTUS BALL BEARING CO.

155 Spring Street, NEW YORK CITY

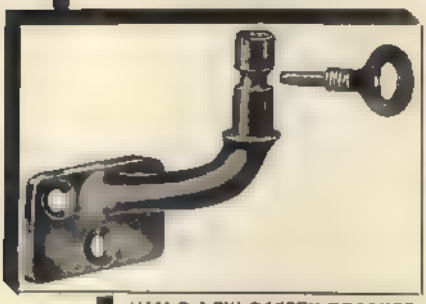
NO MORE FINES

THE BEST TAIL LAMP ON THE MARKET

For Driving without your Tail Lamp Lit

If you equip your car with one of Ham's, and it will save you a great deal of trouble, annoyance and expense. The Vigilant illustrated herewith is our most popular lamp. It is absolutely wind proof, will not jar out and can be relied upon to stay alight under any and all conditions. Besides the red light for rear signal, it gives a powerful white light and the rear handle makes it very handy and convenient for inspecting engine or car in case of a break down. It is fitted with our new Safety Locking Handle which does away with the constant annoyance of losing your lamp or having it stolen.

Write for our new catalogue, it will interest you



HAM'S NEW SAFETY BRACKET

HAM'S VIGILANT TAIL AND INSPECTOR LAMP

C. T. Ham Manufacturing Co.

731 OAK ST., ROCHESTER, N. Y.

How Far Can You READ This?

Actual Size

Hold it Away From You and See

It's the size of **The Warner Auto-Meter** actual size. It shows your automobile is travelling 4 miles an hour. It is just as sensitive on your car as it is in your hand—for the scale of

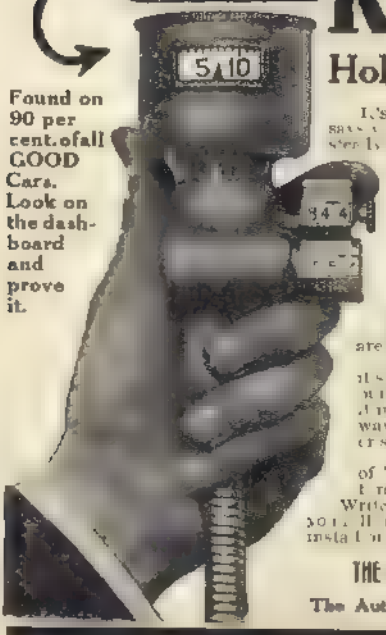
The Warner Auto-Meter

is not influenced by the jar of the car—speed alone moves it. It records all around the way your car operates and tells you are going when you think you are going 5 miles an hour.

It is the most accurate and reliable instrument—how it is made and adjusted is a secret. Like a watch it is so strongly built that it takes years to wear out. It is jar proof and dust proof because the parts we use *magnetism* (in the only practical way which keeps **The Auto-Meter** as reliable as a marine chronometer forever.

Let us **prove** to you the good reasons why our **Guarantee** of **The Auto-Meter** is more liberal than any other manufacturers of speed indicators **dares** to make.

Write us **The Model** and **Power** of your car and we will send you a full description of **The Auto-Meter** with price ready to install on the dashboard.



Found on 90 per cent. of all GOOD Cars. Look on the dash-board and prove it.

THE WARNER INSTRUMENT CO., 679 Roosevelt St., Beloit, Wis.

The Auto-Meter is sold by all Dealers and at the best Garages.

"THE OLD RELIABLE"

DIETZ MOTOR LAMPS

OIL AND GAS

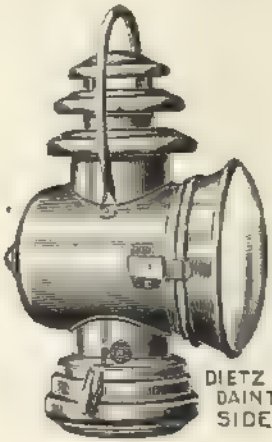
DIETZ "DAINTY"

SIDE *and* TAIL LAMPS

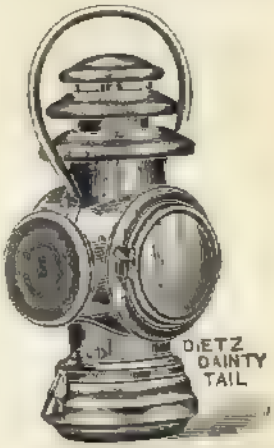
Cold Blast Principle

DIETZ

"DAINTY" side lamps are especially adapted to small motor venicles—They are of medium size, are very durable and satisfactory.



$5.50 EACH, LIST



$6.00 EACH, LIST

DIETZ

"DAINTY" tail lamps are filling a large demand for a clean and reliable rear signal of medium size. They are popular on all makes and sizes of cars.

Our "Presto" (acetylene) and **"Comet"** (electric) burners are adapted to our **"Dainty"** lamps—Change in one minute from oil to acetylene or electricity.

WRITE FOR CATALOG AND DISCOUNTS
OF OUR FULL LINE OF MOTOR CAR LIGHTS

R. E. DIETZ COMPANY

Largest Manufacturers of Lanterns in the World

60 Laight Street ESTABLISHED 1840 **New York, U.S.A.**

Investigate our "Handy" Acetylene Gas Generators—The Best on the Market

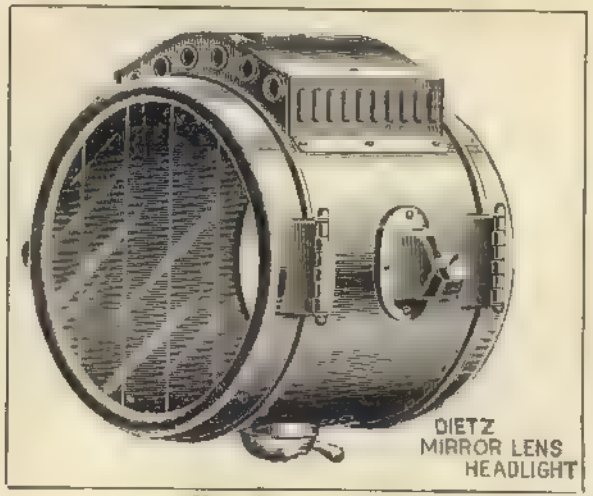
"THE OLD RELIABLE"

DIETZ MOTOR LAMPS

OIL AND GAS

DIETZ MIRROR LENS HEADLIGHTS AND SEARCHLIGHTS

INVESTIGATE
DIETZ "HANDY" Generators. Simple, Positive, Quick and Clean.
2 Sizes: 2½ lbs. and 5 lbs. Carbide.

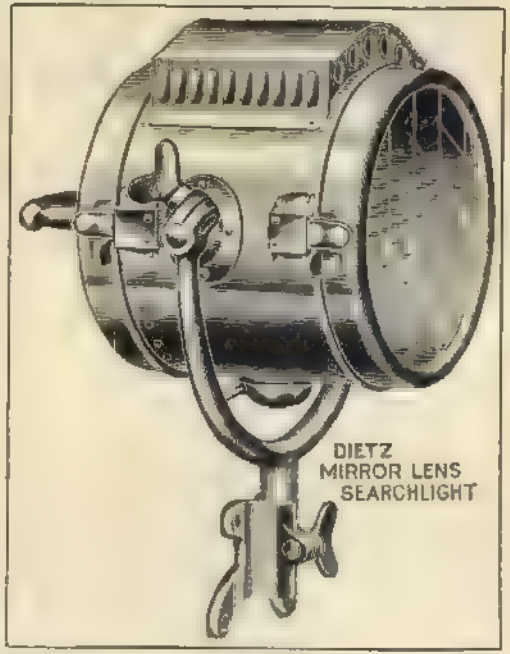


SIZES

Headlights
6 in.
7 in.
8 in.
10 in.

Searchlights
6 in.
7 in.
8 in.
10 in.

Send for Catalogue, Prices and Discounts



Note the substantial appearance and hinges front and back affording access to all parts

R. E. DIETZ COMPANY

LARGEST MANUFACTURERS OF LANTERNS IN THE WORLD

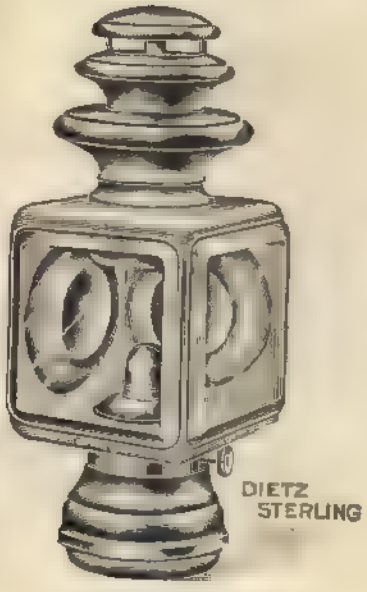
60 LAIGHT STREET **Established 1840** **NEW YORK, U. S. A.**

DIETZ

Motor Oil Lamps

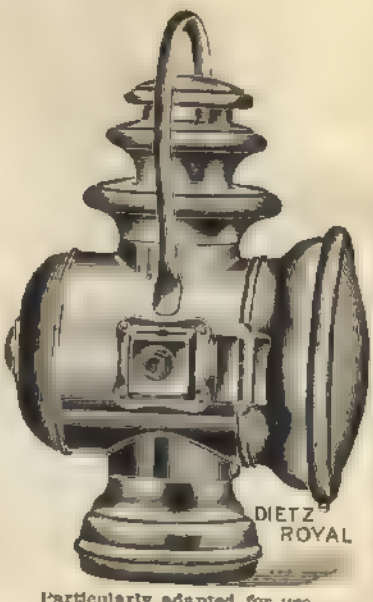
Our Leading Styles for 1907

Guaranteed to Stay Lighted



An admirable equipment for Limousines and Landaulets.
List Price $15.00 Each

They Have The Experience Of 67 Years Of Lamp Building Behind Them



Particularly adapted for use on heavy cars.
List Price $15.00 Each

These Lamps embody our Original Cold Blast Construction. Write for complete 1907 Catalog and Price List of Lamps and Parts, with Discounts.

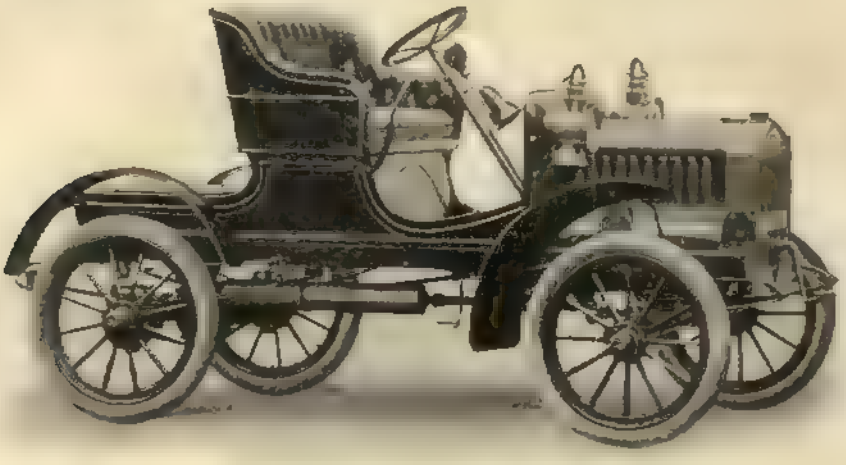
R. E. Dietz Company

LARGEST MANUFACTURERS OF LANTERNS IN THE WORLD

60 Laight Street, New York, U. S. A.

ESTABLISHED 1840

"The Maxwell"



12 Horsepower Tourabout. Price $825.

The Maxwell has proved itself in every event of motoring importance since its introduction in 1904.

The Maxwell introduced the unit construction and 3-point suspension multiple disc clutch.

The Maxwell adopted the thermo-syphon cooling system to eliminate the troublesome pump.

The Maxwell is shaft driven. No chains to break or stretch. These were *Maxwell* features in 1904.

In 1907 no fundamental change is necessary. *Maxwell* construction is adopted in all high-grade motor cars.

The *Maxwell Doctrine* has made good.

Buy a *Maxwell* and you do not buy an experiment.

The *Maxwell* catalogue is the most comprehensive ever issued, and explains the foundation of *Maxwell* success. As an automobile educator it is invaluable. Write Department 7 for any other literature on the famous cars

MAXWELL-BRISCOE MOTOR COMPANY

Pawtucket *Main plant, Duane St., Tarrytown, N. Y.* *Chicago*

"THE OLD RELIABLE"

DIETZ MOTOR LAMPS

OIL or ACETYLENE

DIETZ "Paragon" Launch Lights

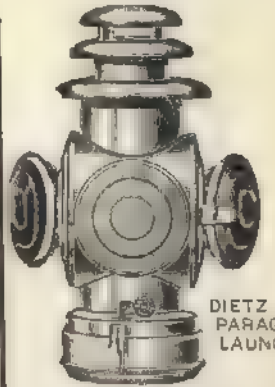
Dietz Interchangeable Burners

are an Exclusive Feature of DIETZ Lamps permitting the use of Kerosene, Acetylene or Electricity at will.

From Oil to Electricity
$2.00 Each List

From Oil to Acetylene, $1.50 Each List

Send for Catalog and Discounts



Lenses Show Straight Ahead
Green Starboard Ruby Port.
$7.00 Each List

R. E. DIETZ COMPANY

Largest Manufacturers of Lanterns in the World

60 Laight Street — New York, U. S. A.

Established 1840

"THE OLD RELIABLE"

DIETZ MOTOR LAMPS

OIL or ACETYLENE

DIETZ "Paragon" Launch Lights

Dietz Interchangeable Burners

are an Exclusive Feature of DIETZ Lamps permitting the use of Kerosene, Acetylene or Electricity at will.

From Oil to Electricity
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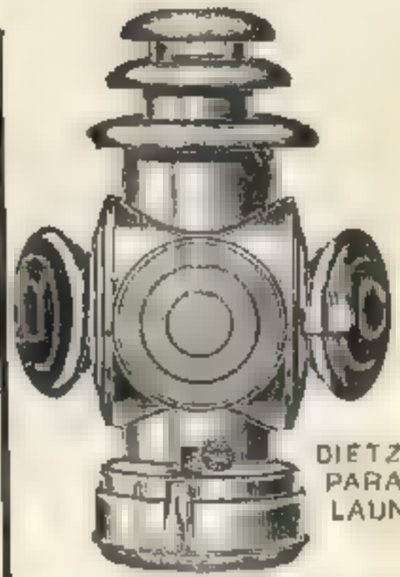
From Oil to Acetylene, $1.50 Each List

Send for Catalog and Discounts



Lenses Show Straight Ahead
Green Starboard, Ruby Port.
$7.00 Each List

R. E. DIETZ COMPANY

Largest Manufacturers of Lanterns in the World

60 Laight Street — New York, U. S. A.

Established 1840

DOLSON

1908

IT is with that degree of pleasure which follows only the knowledge of a rare work well accomplished that the Dolson Automobile Company announces the completion of its nineteen hundred eight models and their readiness for immediate delivery to agents.

These splendid cars are the elaboration of nearly forty years of vehicle building, and nothing that human skill could devise or ingenuity suggest has been spared to make them the royalty of motordom. In beauty of design and in luxury of appointment: in that delightful silent flight which is so exhilirating to all who know it; in absolute worthiness of construction: and in all those finer concomittants that go to make automobiling the perfect pastime, the nineteen hundred eight Dolson cars measure up to that high type of motor car refinement and efficiency which has for years been the ideal of John Dolson and the chief aim of his automobile career.

Following out the well-known Dolson power policy the nineteen hundred eight models continue to be among the highest powered shaft driven cars built. They are veritable Samsons in the automobile world. The strength of giants is in their loins of steel. John Dolson has for years been a most consistent advocate of high power in automobiles, and has lived to see his theories, once rejected as extreme, approved and successfully applied by the self-same engineers who once derided them. Power is the soul of the automobile, and for years Mr. Dolson has devoted his energies and ability to the perfection of the high-powered motor car and in this nineteen hundred eight creation he has given to the pubic a Goliath that will plow the sands of the western deserts or mount the grades of nature's huge upheavals where lighter powered cars would choke and die of their own impotence. Power and simplicity have been the Dolson watchwords—and they make for all that is really great in the motor car.

The nineteen hundred eight models are all four-cylinder cars, and comprise the Dolson Sixty—seven passengers, the Dolson Forty, and the world-famous "Cannonball." There are no frills on the new cars. They are sane and simple in construction, and regal in their marvelous strength and surpassing beauty. Price considered, there is not on top of earth so good, so great, so worthy an automobile as

"THE CAR JOHN DOLSON BUILDS"

The Season of 1908 promises to break all records for sales of high powered cars. The manufacturing capacity of the Dolson factory has been largely increased for the coming season and we can handle several good contracts in addition to the agencies already established. Immediate deliveries can be made and early correspondence is solicited.

DOLSON AUTOMOBILE CO.

CHARLOTTE, MICHIGAN

EVERY STUDEBAKER CAR IS CAREFULLY TESTED BY ROAD EXPERTS, AND MUST PROVE ITS EFFICIENCY UNDER HARDER USAGE THAN THE AVERAGE CAR IS EVER CALLED UPON TO ENDURE

The road tests through which every

Studebaker

car is put, before it is ready for shipment, are indisputable evidence of the thorough manner in which Studebaker automobiles are constructed, and explain why they give such uniformly satisfactory service when touring over rough and difficult roads.

Studebaker automobiles are not tested on a smooth race track, but on a seven-mile course over rough and hilly roads. As shown in the illustration, a seat is attached to the chassis, the rear of which is weighted down with sand bags weighing 1,000 pounds, to give a maximum load. The car is then taken out upon the course and every detail of its construction is thoroughly tested.

After a Studebaker car has been passed by our road experts the only thing remaining for the purchaser to consider is the style of the car desired and the price

Studebaker Automobile Co., South Bend, Ind.

BRANCHES

CHICAGO, ILL., Studebaker Bros. Mfg. Co.
DENVER, COL., Studebaker Bros. Mfg. Co.
DALLAS, TEX., Studebaker Bros. Mfg. Co.
KANSAS CITY, MO., Studebaker Bros. Mfg. Co.
NEW YORK CITY, Studebaker Bros. Co. of New York
PORTLAND, ORE., Studebaker Bros. Co. Northwest
SAN FRANCISCO, CAL., Studebaker Bros. Co. of Cal.
SEATTLE, WASH., Studebaker Bros. Co. Northwest
SALT LAKE CITY, UTAH, Studebaker Bros. Co. of Utah.

SELLING AGENTS

BALTIMORE, MD., Auto Supply and Storage Co.
BOSTON, MASS., Prentiss Motor Car and Supply Co.
CHARLESTON, S. C., Lesesne Electric Co.
CLEVELAND, O., Central Automobile Co.
PHILADELPHIA, PA., Tilghman Seeds & Co.
PITTSBURG, PA., E. McNary Co.
ROCHESTER, N. Y., A. F. Harr.
SAVANNAH, GA., Kramer & Wroten.
ST. LOUIS, MO., Union Electric Light and Power Co.
TOLEDO, O., Clark Bros. Automobile Co.

STEVENS-DURYEA

Limousines

We are preparing a limited number of Light 6 Limousine bodies for delivery, commencing the latter part of July. If you desire a Limousine for your Light 6 for use in the Fall, we would advise sending in your specifications through your dealer as soon as possible.

Comfort as well as style was kept in mind in the designing of these bodies. The curved windows in front afford the occupants within an unobstructed view The bodies are of aluminum with round backs, seating four inside comfortably or five with a little crowding, and two in the front seat.

A limited number of Model R Limousines will also be ready in June. These bodies can be fitted to any Model R sold in 1905, 1906 or 1907. The inside seating capacity is three comfortably. On account of the limited supply, it is policy to place your order now.

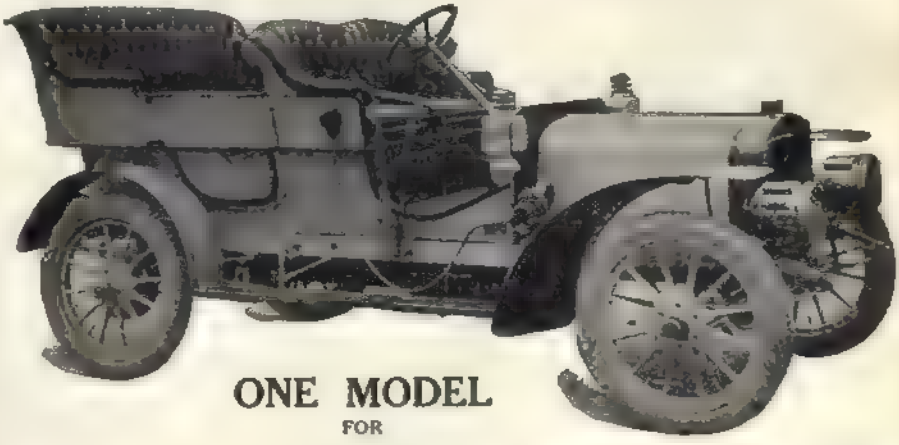
STEVENS-DURYEA COMPANY

700 Main Street

CHICOPEE FALLS, MASS., U. S. A.

Member A. L. A. M.

Dorris 1907 Dorris



ONE MODEL

FOR

Runabout	30	Horse	Power	$2500
Touring Car	30	"	"	2500
Limousine	30	"	"	3500

DORRIS MOTOR CAR CO., St. Louis

THE CARTERCAR

"THE CAR AHEAD"

In the "CARTERCAR" will be found the MINIMUM of MECHANISM thus eliminating most of the troubles encountered with automobiles. Experienced drivers will appreciate our claims of ABSOLUTE FREEDOM from TRANSMISSION TROUBLES, PERFECT CONTROL WITH ONE LEVER, avoidance of that jerky motion when starting or changing speed, and most important of all, no amount of rough handling will injure the friction transmission.

OUR CATALOGUE TELLS ALL ABOUT IT.

MOTORCAR COMPANY, Detroit, Michigan, U. S. A.

GARFORD PARTS

Makers of the Celebrated "Garford Chassis"

Steering Gear—pinion and sector type also supplied

Brake—made in 3 sizes

ALSO

Motor Wagon Parts

We can promptly execute orders for steering gears, brakes, sprockets, motor hangers and other parts for motor wagons. They are suitable for all classes of commercial power vehicles, from the lightest to the heaviest. They are not "freak" components of a wonder working vehicle. They enjoy the rare distinction of having been thoroughly tested for some years past in the most varied and severe kind of commercial service.

Circulars 2, 3, 5, 10 and 11 give information concerning them.

THE GARFORD COMPANY, Elyria, Ohio

Sales Manager, HAYDEN EAMES, Cleveland, O.

STEVENS-DURYEA

Limousines

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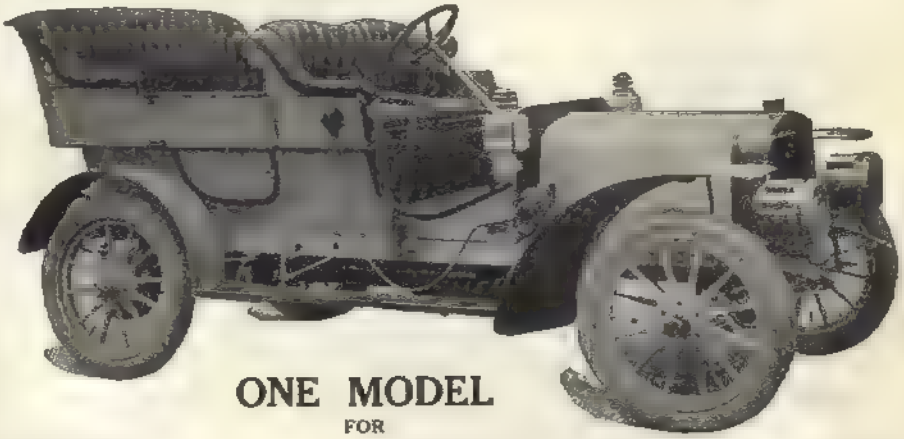
Dorris 1907 Dorris



ONE MODEL

FOR

Runabout - - -	30 Horse Power - - -		$2500
Touring Car - -	30 " " - -		2500
Limousine - - -	30 " " - - -		3500

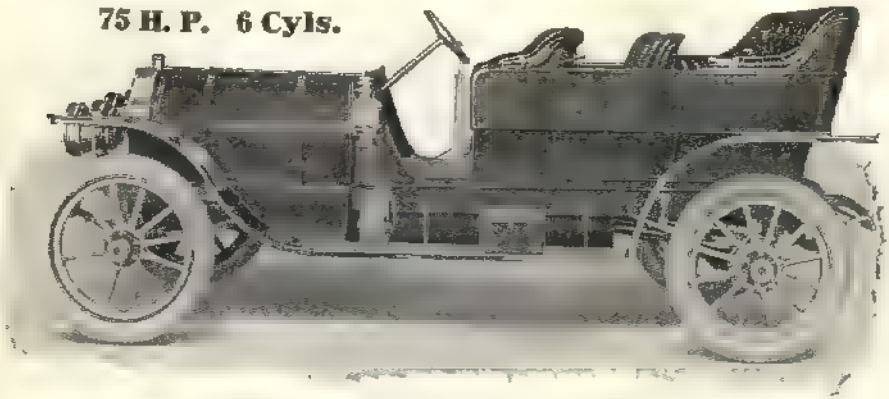
DORRIS MOTOR CAR CO., St. Louis

THE surest indication to the dealer and owner of the truth of our claim that our line of cars outclasses competition lies in the fact that nearly our entire output for 1907 have been disposed of to those fortunate dealers

Who have contracted for GEARLESS

Cars since our First Announcement, March 1st, '07. That's "going some" and we believe that you will be interested in knowing the facts about such a line of CARS.
Write for catalogue.

75 H. P. 6 Cyls.



The Gearless "Great Six," $4000.00

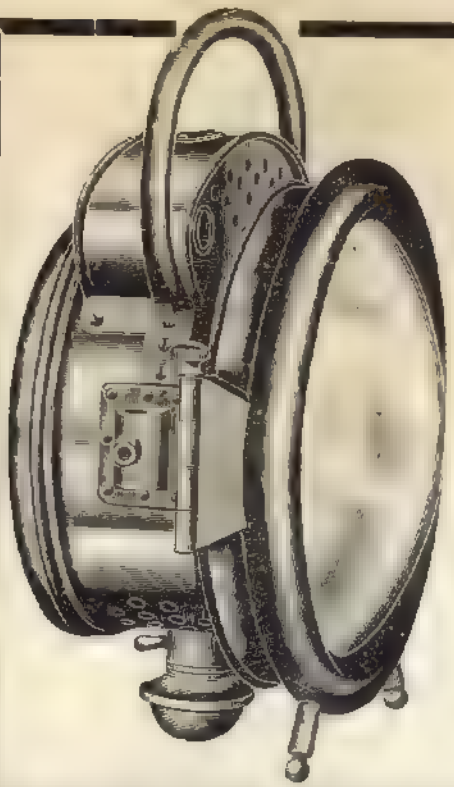
GEARLESS TRANSMISSION CO. MOTOR CAR DEPT. **ROCHESTER, N. Y.**

PENNSYLVANIA

BUILT TO USE.

A carefully constructed motor car for continued use over our questionable roads. 30 H. P., 2500 pounds—$2800.00. The mechanical construction and refinement are set forth in a catalogue sent upon request.

PENNSYLVANIA AUTO MOTOR CO.
BRYN MAWR, PA.



1908 MODEL

Number 400

Catalogue by Request

Saxon Lamp Co.

530 W. 28th St., New York

DORRIS

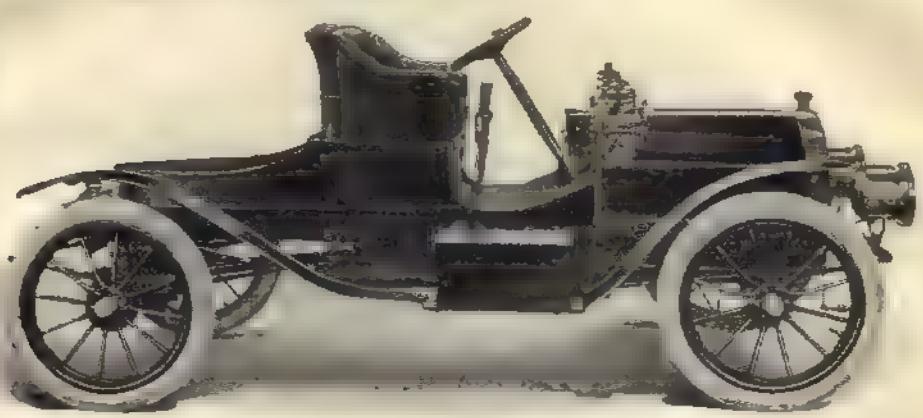
1908 MODEL C TOURING CAR

30 H. P.—SELECTIVE TYPE TRANSMISSION
VALVES IN HEAD THREE POINT SUSPENSION
PLATFORM SPRINGS 106″ WHEEL BASE
MULTIPLE DISC CLUTCH

PRICE $2500, Including Lamps, Horns, Etc.

DORRIS MOTOR CAR CO., St. Louis, Mo.

AGENTS—Here is a selling proposition of real merit. As we have increased our factory output by 50 cars we can place a few more ten car agencies. Write for particulars.



The Famous DRAGON Roadster

4-CYLINDER WATER-COOLED MOTOR

$2000
F. O. B. Philadelphia

SHAFT DRIVE SLIDING GEAR TRANSMISSION

24-26 H. P. Delivered to Rear Wheels

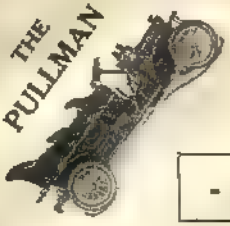
The DRAGON is the best type of modern roadster. Neither a ponderous racer nor a dinky toy, but a comfortable, sensible two-passenger car with ample power and no excess weight. Same chassis as Dragon Touring Car. The famous Golden Dragon is of this model,—the car that has made a continent talk. Detachable rumble seat furnished on the Dragon Roadster at purchaser's option.

The Dragon Automobile Co.

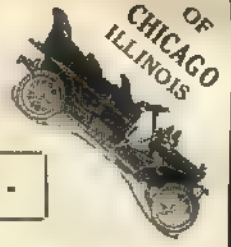
(Member A. M. C. M. A.)

30th, 31st and Chestnut Streets, Philadelphia

1677 Broadway, New York 117 Massachusetts Ave., Boston 1337 Michigan Avenue, Chicago
524 Golden Gate Ave., San Francisco 16 Temperance St., Toronto 101 Burnside Place, Montreal



"The most Powerful and Flexible Motor of its size I ever rode behind."—
A well-known Chicago Chaffeur.

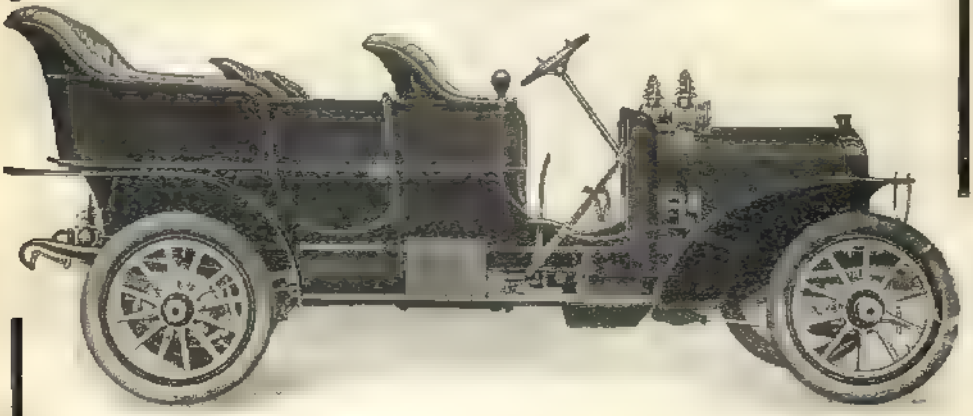


- A CAR IS ITS OWN BEST WITNESS -

EXAMINE ITS LEADING FEATURES

MOTOR—Four vertical cylinders, 5x5½, water cooled, silent, powerful.
DRIVE—Shaft, enclosed bevel gears, multiple metal disc clutch.
TRANSMISSION—Sliding gear, ball bearing, three speeds and reverse.
LUBRICATION—Positive force, seven feeds, gear-driven, visible on dash.
FRAME—Cold pressed alloy steel, 4½ inch depth, front narrowed, great steering range.
AXLES—Nickel steel, special, live floating rear, dropt I beam front.
BRAKES—Two sets direct to hubs, double-acting, interlocking with clutch.
CONTROL—Perfect, large margin for emergencies, all best devices

"It is the most responsive–most easily controlled car in the world"



The Pullman Touring Car of Chicago

7 Passengers, 120 Inch Wheel Base, 36 Inch Wheels, 45-50 Horse Power

Price, 1907—$3,600; Price, 1908—$4,000

At Last a $5,000 Car for $3,600

In running order it weighs 2904 pounds; it is made of steel; it is the strongest and lightest car of its size on the market.

Send for Catalog, Illustrations of Motor and Full Specifications

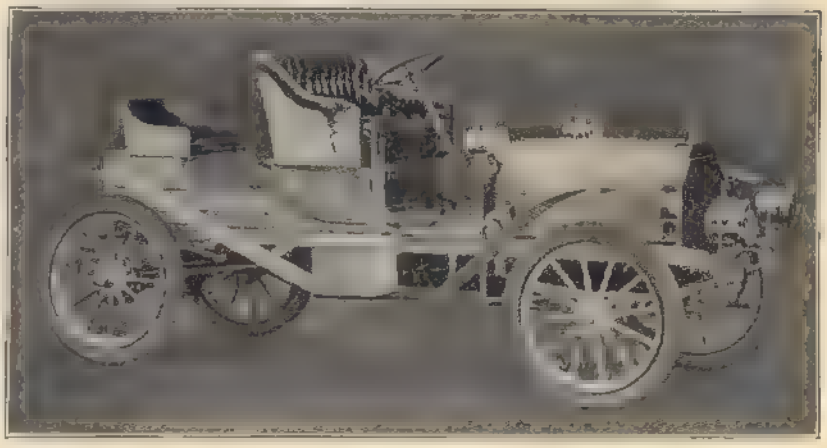
The 1907 Product is Limited

Pullman Motor Vehicle Co.

271-285 Dearborn Street
CHICAGO, ILL., U. S. A.

Agents will be Engaged for 1907, 1908 & 1909

DRAGON



Made Good Makes Good

"Made good" in the shop, it has "made good on the road, and therefore with its owners.

No greater correctness of principle, no better working out of design, no more thoroughness of construction, no finer quality of materials, no more simplicity and reliability could be put into a car.

Simple Strong Powerful Reliable

The Dragon is a car for the owner, not the repair man. It sells easily on talking points that stand up as plain as a post when you look into it. When a prospective customer looks, he buys.

Two Models Touring Car and Roadster

24-26 H. P. **$2,000** (f. o. b. Philadelphia)

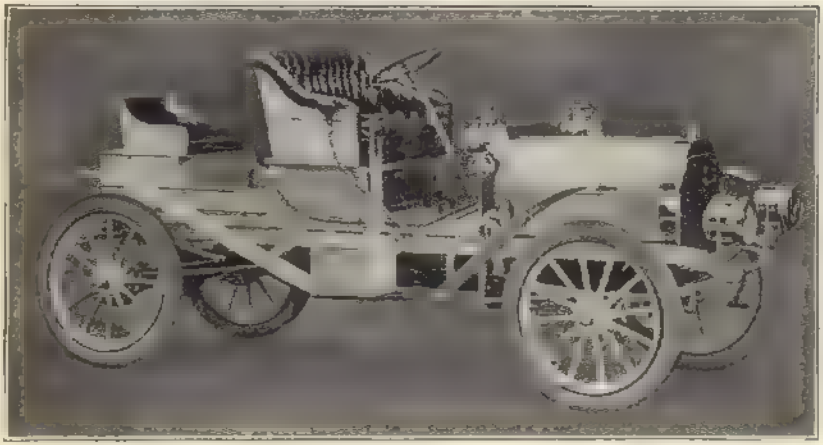
THE DRAGON AUTOMOBILE COMPANY

Member A. M. C. M. A.

30th, 31st and Chestnut Streets, Philadelphia

1677 Broadway, New York
524 Golden Gate Ave., San Francisco
1337 Michigan Ave., Chicago
101 Burnside Place, Montreal
620 Mary and Ave., Pittsburg
117 Massachusetts Ave., Boston
16 Temperance Street, Toronto

DRAGON



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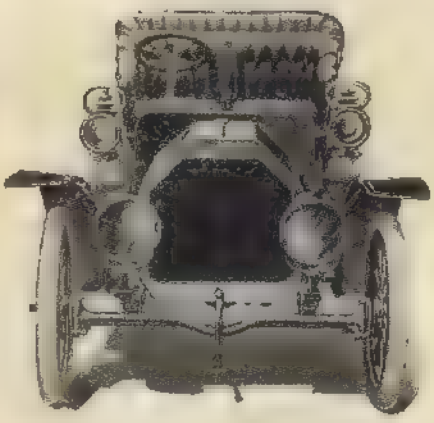
$2,000
Five Passengers
24-26 H.P.
Rear Wheel Rating



4-Cylinder
Water-cooled
Motor
Protected Shaft Drive
Double Hub Brakes

TEN INCHES ROAD CLEARANCE

A CLEAN CUT CAR

The first thing that strikes a man in examining a Dragon car is its simple, clean-cut construction. The absence of complicated "improvements" and experimental apparatus generally, makes the Dragon appeal to the man who wants to drive and care for his own car. Emerson said that it is proof of highest culture to say the greatest things in the simplest manner; simplicity is likewise proof of highest engineering skill in automobile building.

Twenty-four years' experience has taught the designer of the Dragon how to build a car that does not require a mechanical expert to understand, operate and keep up.

Every part of the Dragon is constructed on lines of safe, tried, sure-footed practice.

Touring Car and Roadster
Same Power, Same Price

DRAGON

Write for Booklet to

The Dragon Automobile Company

Member A. M. C. M. A

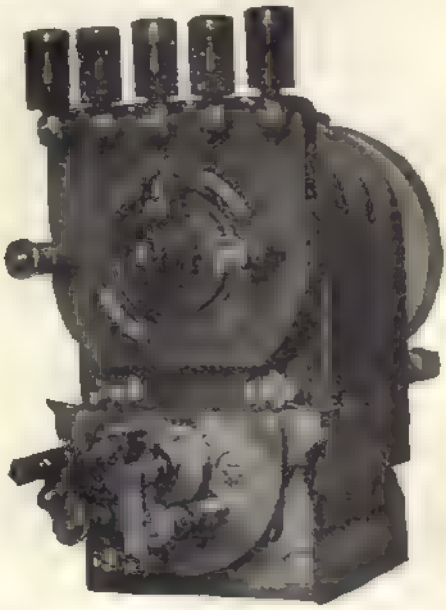
30th, 31st and Chestnut Streets, Philadelphia

1677 Broadway, New York — 1337 Michigan Avenue, Chicago — 117 Massachusetts Ave., Boston
524 Golden Gate Avenue, San Francisco — 182 Peel Street, Montreal

"Eisemann=Lavalette"

MAGNETOS

prove once more their incontestable superiority in the recent Monaco Boat Races.



A new world's record of 34.77 miles an hour by **Panhard-Tellier** in the race for the championship of the sea. The boat was equipped with a Panhard-Levassor Motor, having the **"Eisemann-Lavalette" Magneto.** The selection of this magneto was a tribute to its reliability and dependability, and results proved the wisdom of the choice.

For the high-grade motor car or motor boat there is no better equipment.

Write for full details.

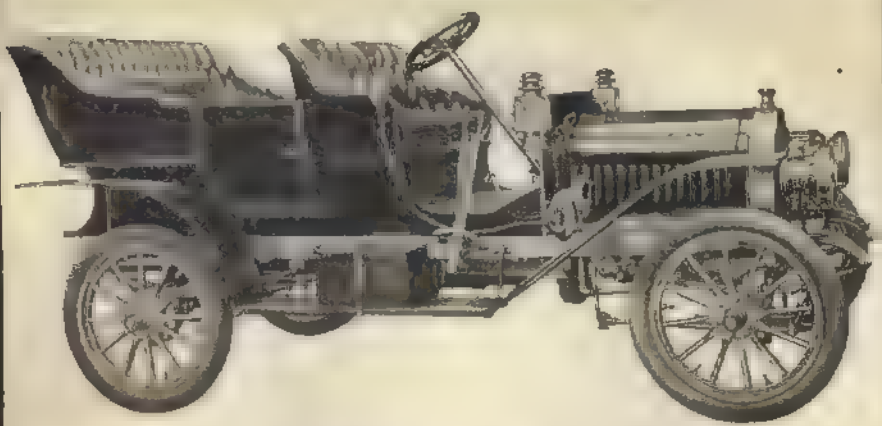
LAVALETTE & CO.

Sole Owners of United States and Canndian Patents

112-114 W. 42nd Street **NEW YORK CITY**

Elmore

Valveless 2-Cycle



The Car that has no Valves

In the earliest type of two cycle engine, valves were used as in the four cycle.

As a result the early two cycle was subject to variations and inaccuracies in the application of power—**just as every four cycle engine built** today is.

Then came the perfected Valveless Two Cycle Elmore absolutely doing away with all valves, cams and attendant mechanisms.

In this Valveless Two Cycle Elmore engine the **highest type of simplicity** attained in any automobile ever built has been reached.

You now have a car which the owner can operate from the very first—without the aid of a mechanical engineer.

You now have a car in which the question of absolute accuracy in setting the valves—so vital in the four cycle and so prolific in trouble, especially under the strain of **exceedingly hard work—is absolutely done away with.**

An impulse from **each of the three cylinders** every time the main shaft turns (continuous torque or turning power) and an engine reduced to the **first principles** of **simplicity** by the cutting out of all the valves—that's why the Elmore is making automobile history **every day in the year.**

The four-cycle is working **away** from simplicity by increasing cylinders and therefore increasing complications, and **no further progress is possible** to the four cycle under such conditions.

The Valveless Two Cycle Elmore does away with the idle stroke of the four cycle; it gives the same power with less than half the parts—and that power comes in a **smooth, unbroken rhythmic** flow that gives an ease and luxury of operation simply amazing to those who have been accustomed to the four cycle type.

Progress had stopped in four cycle construction—there was bound to be a breaking away from old lines. It has come in the Valveless Two Cycle Elmore brought to a point of absolute perfection by four years of phenomenal performance in the hands of hundreds of owners.

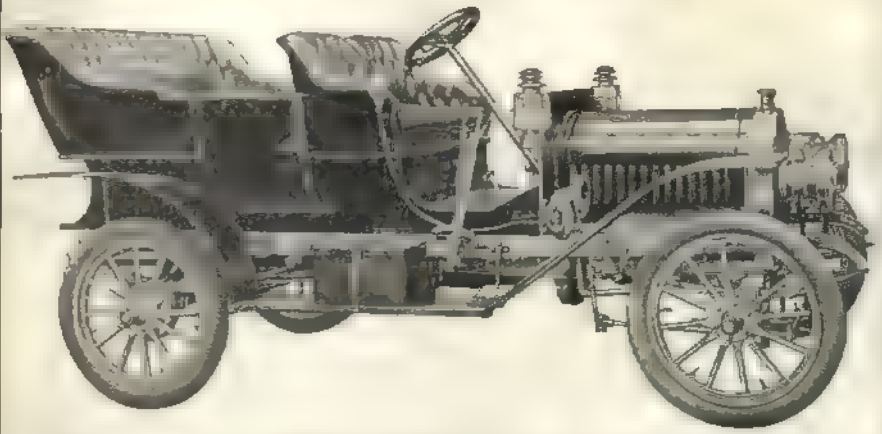
Send at once for the three intensely interesting little books, "Busy Little Two Hundredths of a Second", "One Long Jump and Two Short Steps" and "The Heart of the Man and the Machine".

The Elmore Mfg. Co.

904 Amanda St., Clyde, Ohio

MEMBERS A. L. A. M.

Elmore
Valveless 2 Cycle



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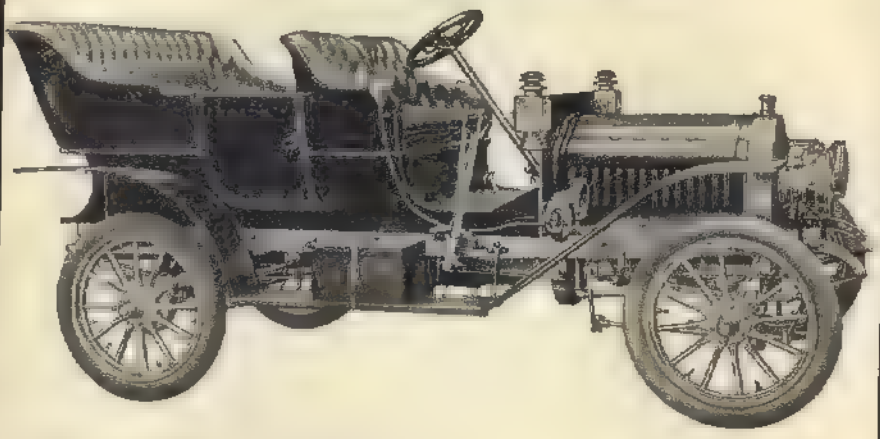


As Usual—
Something Unusual

Only 3 seconds variation per mile in a race of 50 miles.

"What!" you'll say, "only 3 seconds in 50 miles?" Yes indeed—and better than that—the two-cycle **Elmore** won the event hands down, beating a number of cars of much greater horse-power.

Yes indeed—and better than this, the **Elmore** jumped right from this first fifty-mile race into another five-mile race with a 50-60 H. P. car and won the second, hands down.

Yes indeed—and better than **ALL** this too—the victorious **Elmore** was just a demonstrating car which had just passed through one of the most trying trips imaginable over the worst roads and fords of California. All this, mind you, without a stop for overhauling or a halt for breath.

It's the evenness of the performance, of course, that's remarkable—and directly due, of course, to the valveless two-cycle construction and its resultant continuous flow of power.

Our interesting literature, called "Our Daily Mail," will furnish you with further facts.

Will you write for it.

The Elmore Mfg. Co.

1004 Amanda St., Clyde, Ohio

MEMBERS A. L. A. M.

WITH BONNET SEALED—

A Flawless Record

FROM START TO FINISH

Elmore Valveless 2-Cycle

"For all practical purposes the grandest performance of this or any previous Glidden Tour."

That was and is the consensus of opinion concerning the wonderful achievement of the valveless two-cycle Elmore in coming through the Glidden Tour with bonnet locked and sealed.

At the outset good friends of the Elmore shook their heads doubtfully and said, "You're running a risk."

We knew we were not.

Every Elmore owner knew we were not.

We've been preaching and proving for years that all the Elmore engine needs is a good fat spark—that the continuous impulse principle eliminates every weakness that would make such a test a dangerous risk for the four cylinder type.

We knew that unless it was wrecked by accident it would not be necessary for a human hand to touch the Elmore engine.

We proved that in the last Glidden Tour—but we wanted to make the proof so conclusive that the whole world would know it.

So, in the presence of a committee in Cleveland we locked and sealed the bonnet and relinquished the key. If we won—it meant that the most brilliant performance of any and every other car was outdone and outshone.

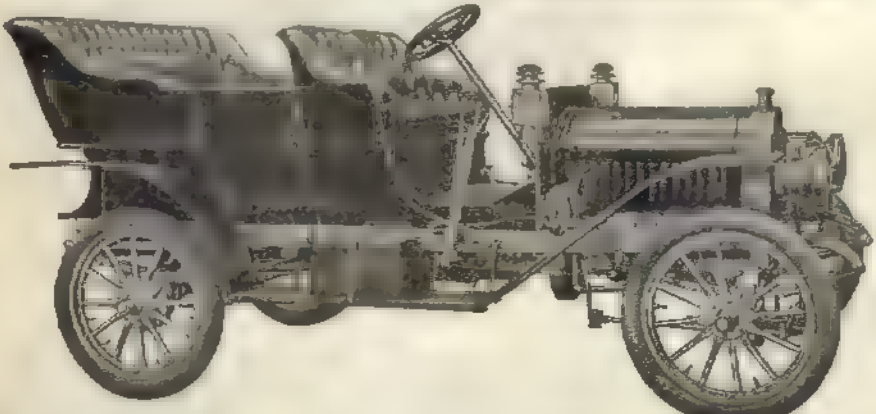
They could coax and tinker, renew, repair and replace—we had voluntarily put the Elmore engine to the most terrific test to which any car in this country has ever been subjected.

We won—just as we have won time and time again in the hands of hundreds of owners who have put the valveless two-cycle engine into direct contest with the best four-cycle cars made.

Just as quickly as it can be done we're going to put the story of this wonderful tour into print.

In the meanwhile, you will want to know all about "the car that has no valves"—the car that is making automobile history—the car that cannot keep up with the demand while many four-cycle cars are languishing.

Write for the booklet, Our Daily Mail.



ELMORE MFG. CO., 1004 Amanda St., Clyde, Ohio

Members A. L. A. M.

NOT ONE TIRE COMPLAINT THIS YEAR

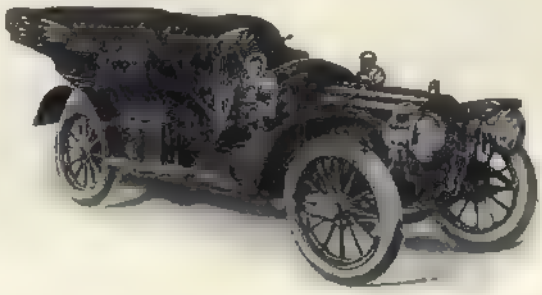
Thomas Flyer

Hundreds of cars in daily use for months. Some have traversed thousands of miles over roughest kind of roads. One made over 8000 miles. Another 10,000 miles. **Not one complaint** of tire trouble.

REASON found in splendid policy of providing 1500 pounds surplus tire capacity by equipping cars with larger tires and wheels at additional cost to us of over $100. Front tires 36 x 4 inches. Rear tires 36 x 5 inches.

PROVES again that we will not only eliminate all structural troubles but eliminate practically all operating troubles such as tire troubles by use of big tough tires and ignition troubles by the use of a double ignition system.

All this is submitted for the cool and critical buyer—the conservative business man. Regardless of price no other large car can present such a grand record.



60 H. P. Thomas Flyer, $4000, f. o. b. factory
40 H. P. Thomas Forty, $2750, f. o. b. factory

E. R. THOMAS MOTOR COMPANY

MEMBER A.A. . A. M.

BUFFALO, N. Y.

FORD

Prompt Deliveries.

Two Errors Can't Correct One Mistake.

Colonel Ingersoll Used to Say "To be a successful liar one must have a good memory for one lie will only fit another lie made for that express purpose, whereas a truth will fit any other truth in the universe."

We Hear a Lot These Days about "hand made" motor cars. It's funny but the same concerns who a year ago, prated of "quality not quantity" as if the two were incompatible, now ought to hope to 2,000 cars per year and still expect you to believe it is "hand work," "personal supervision" and all that sort of rot.

Ford Cars are Manufactured — have been made in immense plants and by modern American methods from the first. And the car Ford ever made is still giving excellent service—what of the "cut and try" contraptions made in that same year?

Hand Work at Best is but a series of mechanical inaccuracies, each made to fit, as nearly as may be, another. Ingersoll would call them mechanical fibs; and making one mechanical fib to fit an other does not cancel the error any more that two fibs make a truth. And when you want to replace a part the maker will need a mighty fine "memory" to give you one that will fit—you'll find he forgot.

Wherever the "Personal Equation" is permitted to enter, absolute uniformity and accuracy are impossible. (Did you ever read a letter written on a hand made typewriter? Would you buy one for a $100? Certainly not. Yet it would cost $10,000 to make one. That's the way with "hand made" cars. The only evidence of superiority is the fancy price. Superior efficiency—it is not there.

Six-Cylinder Ford Cars are the product of the brightest minds, the most efficient organization, the largest experience and the most modern manufacturing plant known to the industry. Every pound of steel is made especially for the Ford Company, under personal supervision of Ford experts, from Ford formulae and finally heat-treated in Ford furnaces. No other concern in the business can make that claim.

A $5,000 Car in Efficiency—luxurious appointments, performance and endurance. The Ford price is made possible by Ford methods and Ford quantity production. We could command the fancy price too—but we're looking farther ahead than a year or two.

Add to the Quality of the Car "Ford courtesy"—the replacement, cheerfully, promptly, gratis of any part that shows a defect in work or material—and the value cannot be equalled.

1907 FORD MODEL K:—6 cylinder Motor, 40 h.p. at the wheels will climb anything the wheels can hold on the "high" six to sixty miles per hour by throttle control alone—no need for transmission except for reversing; two complete and separate systems of ignition, magneto and storage battery, jump spark; two sets of plugs; 120 inch wheel base; 34 inch x 4 inch tires; all the latest features and improvements; the silence of an electric, the flexibility, the steady pulling power of a "six," the simplicity and reliability of a —FORD. In quality, performance and endurance a $5,000 car.

A Demonstration is a Revelation

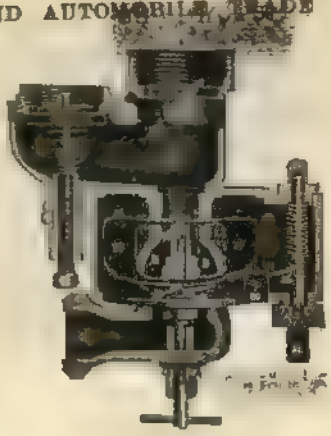
Price, $2,800. With Top and Full Touring Equipment, $3,000

FORD RUNABOUTS (4 Cylinder) Model N $600; Model R, edition de luxe, $750

FORD MOTOR COMPANY, Factory and Main Office DETROIT, MICH.

BRANCH RETAIL STORES: { New York, Philadelphia, Boston, Chicago, Buffalo, Cleveland, Detroit and Kansas City.

Canadian trade supplied by Ford Motor Company of Canada, Walkerville, Ont.



MODEL E

The Holley Automatic Carburetor

is the kind that stays sold and gives as good satisfaction in the last year of its service as the first. This year's models have hollow copper (not cork) floats, concentric with the spray nozzle, so that the mixture is unaffected by tilting. The automatic air valve is very light, so that the carburetor can be successfully used with one or two cylinder engines, and is located beyond the spray nozzle, thus permitting the air passage to be "strangled," giving efficient atomization at slow speeds as well as high. The float needle valve is unaffected by vertical vibration, and is made of hard steel wire, which will not indent and leak like brass after a few weeks' service. The float level can be adjusted to suit different densities of fuel. The spring tension and lift of the automatic air valve can be adjusted to suit the motor. Every carburetor embodies the results of our experience in manufacturing over 27,000 Holley carburetors.

Prices of Model E. from $11 to $14 according to size. Where else can you get such value for the money?

Holley Carburetors are used by the Autocar Co., Cadillac Motor Car Co., Continental Motor Mfg. Co., Dragon Automobile Co., Ford Motor Co., Holsman Automobile Co., Mitchell Motor Car Co., Nordyke & Marmon Co., Olds Motor Works, E. R. Thomas Detroit Co., and the Winton Motor Carriage Co.

Holley Brothers Co.

675 Beaubien St., Detroit, Mich.

FRONTENAC CARS

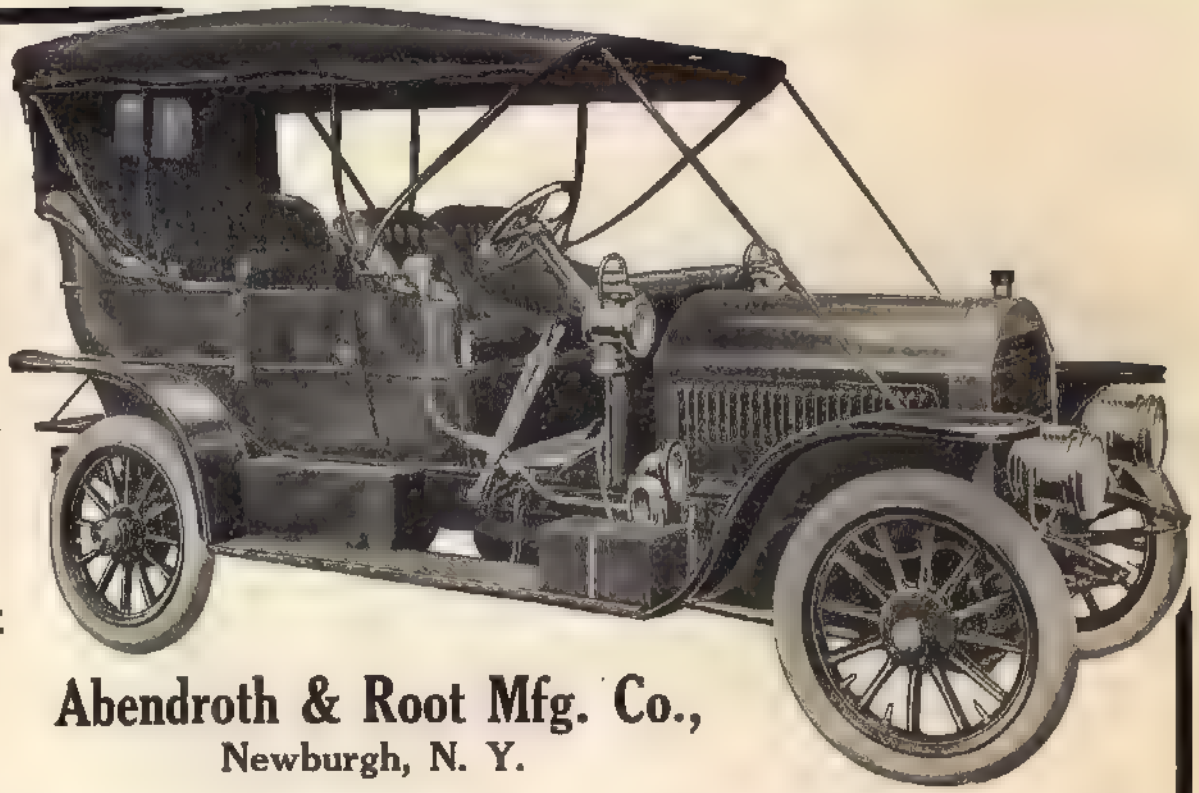
Will appeal to the Buyer through the Agents.

Which are you?

BE SURE

TO CALL AND SEE US
AT THE
GRAND CENTRAL PALACE
October 24-31
Main Floor, Section D.

LIMOUSINE
RUNABOUT



Abendroth & Root Mfg. Co.,
Newburgh, N. Y.

Frontenac 40-45 H. P. TOURING CAR.

More darn plugs than you can shake a stick at, but only one "Adjustable" in the whole bunch—The F R Y, of course.

It can be adjusted to the strongest magneto or the weakest battery in an instant—and you don't have to remove any part of the plug from the cylinder.

Price $2.00 Metric or Half Inch

T. C. & W. L. FRY CO.
Rochester, Penna.

Pat. Applied For

Ask your dealer or write for information.

AIR COMPRESSORS

BELTED—MOTOR DRIVEN

Single and Three Cylinder Styles

Just the thing for public or private garage for inflating tires, cleaning cushions, etc.

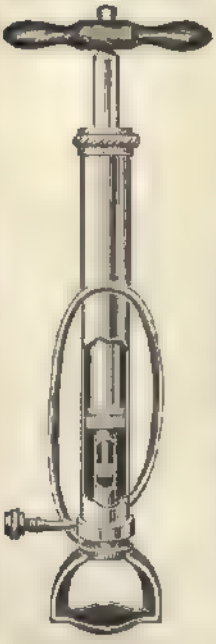
ANNEALED ENGINE PISTONS AND PISTON RINGS, CONNECTING-RODS, MITRE AND ENGINE GEARS.

We are also prepared to furnish finished die-cast Nickel Babbitt or White Brass Crank Shaft or Connecting Rod Bushings.

Season Contract Work Specially Solicited. **Send Us Your Specifications.**

THE F. W. SPACKE MACHINE CO.

INDIANAPOLIS, IND., U. S. A.



Patent applied for

NEW EUREKA TRIPLEX PUMP

Something entirely new. An automobile pump composed of three cylinders 1⅝", 1¼" and ¾" in length, one working inside the other. Represents in a high degree the concentration of power.

Being compactly and scientifically designed, it does the work of a pump three times its size. Works just as easy under 80 lb. pressure as when started.

THE WASHBURN PRESSURE GAUGE

A simple device for lengthening the life of your tires. Set it for whatever pressure you want for your tire, and then start to pump. When the desired pressure is reached, you are immediately notified by the automatic blow-off. The gauge is numbered from 60 to 110 lbs., accommodating any size of tire. You get the pressure at the valve of the tire, not at the base of the pump. Indispensable to every automobile owner. Write for circular.

JUDD & LELAND MFG. COMPANY

CLIFTON SPRINGS, NEW YORK

AIR COMPRESSORS

BELTED—MOTOR DRIVEN

Single and Three Cylinder Styles

Just the thing for public or private garage for inflating tires, cleaning cushions, etc.

ANNEALED ENGINE PISTONS AND PISTON RINGS, CONNECTING-RODS, MITRE AND ENGINE GEARS.

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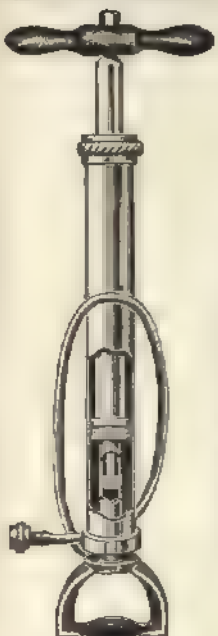

Patent applied for.

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Something entirely new. An automobile pump composed of three cylinders, 1¾", 1⅛" and ⅞"; 18" in length, one working inside the other. Represents in a high degree the concentration of power.

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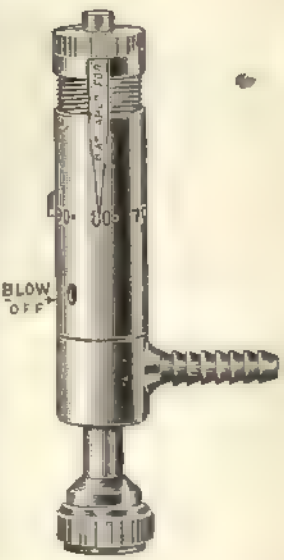


JUDD & LELAND MFG. COMPANY

CLIFTON SPRINGS, NEW YORK.

GAETH AUTOMOBILES

CLEVELAND, O.

Agents write for our proposition.

Low tension ignition with magneto. Contracting band clutch.

A car of Especial Merit, having a number of original and patented features which add to the efficiency and simplicity of the motor, among which are :—

Make and Break Device. Which has attracted the attention of some of America's best engineers.

Thermo syphon water cooling system.

Pistons ground with rings in place, by patent process.

Carburetor (recently patented) which does away with all auxiliary air valves or regulations.

GAETH TYPE XII—35 H. P—$3500

Another Phenomenal Cadillac Economy Record

GREENFIELD, OHIO, 11/24/06.

CADILLAC MOTOR CAR CO.,
DETROIT, MICH.

Gentlemen:

I wrote you some time back that I would give you a statement of the cost of running the Single Cylinder Cadillac Auto. I am pleased to report to you that the expense of the repairs of ten cars was $17.10. Three of these machines have been run two seasons, seven of them one season.

3	machines	1	season	no	expense
1	"	2	"	"	"
1	"	1	"		$ .15
1	"	1	"		.50
1	"	1	"		1.00
1	"	1	"		3.00
1	"	2	"		5.50
1	"	2	"		6.95
				Total,	$17.10

The greater part of the $6.50 was caused by letting the water remain in the radiator and freezing. I think you will find the above record very hard to beat even with the Cadillac Auto. I am pleased to state all have had good use of their cars and some of them are hard drivers. All are highly pleased in every respect with their purchases.

Respectfully yours,

C. W. PRICE.

We have for several weeks been showing you some facts and figures not mere empty claims—relating to the economy of operation and maintenance of the single cylinder Cadillac.

We shall soon enter upon a series of individual experiences covering efficiency and general utility. They will interest you. Watch for them.

Cadillac Motor Car Company
Detroit, Mich.

Members of Ass'n Licensed Auto. Mfrs.

GAETH AUTOMOBILES

CLEVELAND, O.

Agents write for our proposition.

Low tension ignition with magneto. Contracting band clutch.

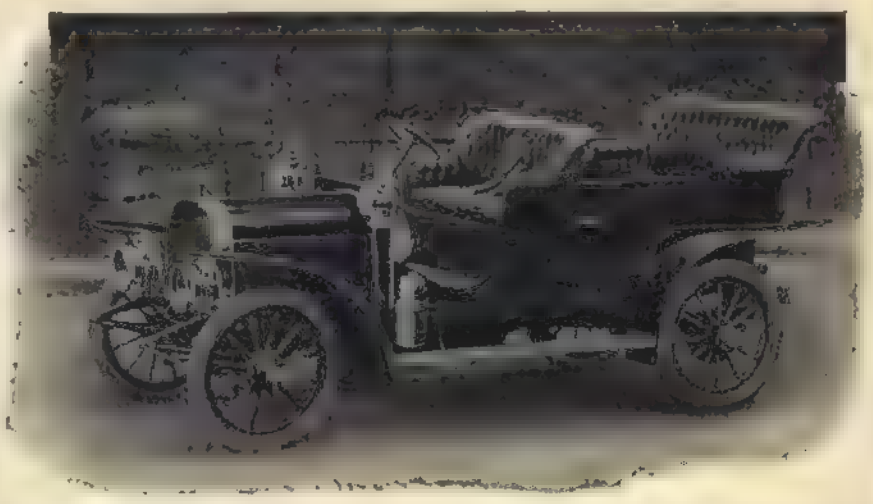
A car of Especial Merit, having a number of original and patented features which add to the efficiency and simplicity of the motor, among which are :—

Make and Break Device. Which has attracted the attention of some of America's best engineers.

Thermo syphon water cooling system.

Pistons ground with rings in place, by patent process.

Carburetor (recently patented) which does away with all auxiliary air valves or regulations.



GAETH TYPE XII—36 H. P.—$3500

Another Phenomenal

Economy Record

GREENFIELD, OHIO, 11/24/06.

CADILLAC MOTOR CAR CO.,
DETROIT, MICH.

Gentlemen:

I wrote you some time back that I would give you a statement of the cost of running the Single Cylinder Cadillac Auto I am pleased to report to you that the expense of the repairs of ten cars was $17.10 Three of these machines have been run two seasons, seven of them one season.

3	machines	1	season	no	expense
1	"	2	"	"	"
1	"	1	"		$ .15
1	"	1	"		.50
1	"	1	"		1.00
1	"	1	"		3.00
1	"	2	"		5.50
1	"	2	"		6.95
				Total,	$17.10

The greater part of the $6.50 was caused by letting the water remain in the radiator and freezing. I think you will find the above record very hard to beat even with the Cadillac Auto. I am pleased to state all have had good use of their cars and some of them are hard drivers. All are highly pleased in every respect with their purchases.

Respectfully yours,

C. W. PRICE.

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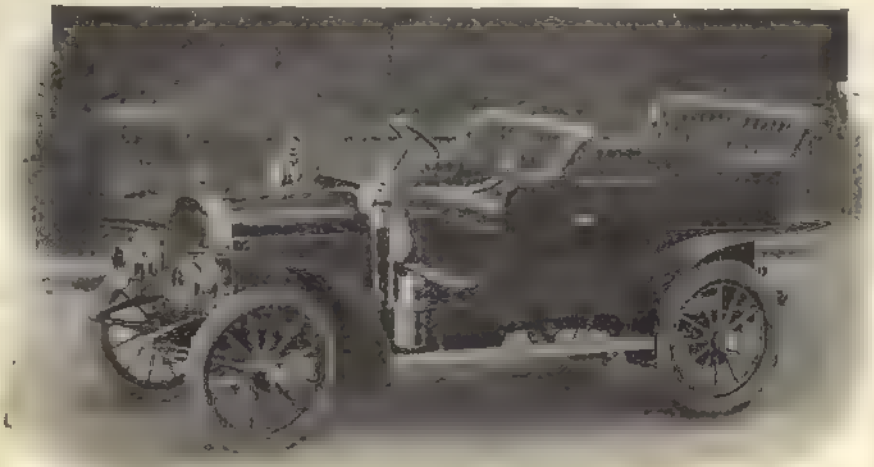


GAETH TYPE XII -36 H. P.--$3500

Columbia

MOTOR CARS

Contain the following special features which largely account for the great success of this season's models:

Crankshaft.—Sawed-out from solid block of Special Chrome Nickel Steel. Not one of the hundreds of these shafts in actual use has broken or given any trouble whatever.

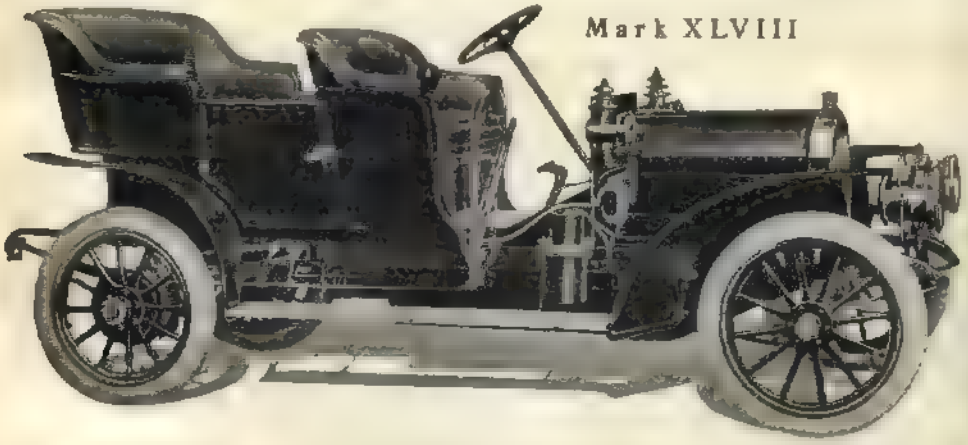
Carburetor.—New Multiple Jet Type giving just the right and most economical mixture for high or low speeds.

I-Beam Front Axles.—Drop forged in one piece without welding. The grain of the metal courses unbroken from wheel pivot to wheel pivot.

Transmission.—Improved type. Entirely does away with the troubles that occur in this member of the mechanism in many makes of cars.

Clutch.—So constructed that it takes hold evenly, gradually and firmly, "savage" engagement being impossible.

With these and other superior mechanical features are supplied bodies that for beauty of design, finish and appointment are unequalled in cars of other makes. This fact is conceded even by our strongest competitors.



Mark XLVIII

Mark XLVIII, 24-28 H. P. Standard Touring Car, $3000
Limousine, $4200

Mark XLIX, 40-45 H. P. Standard Touring Car, $4500
Limousine or Landaulet, $5500

Separate catalogues of Columbia Gasoline Cars and Electric Carriages on request.

ELECTRIC VEHICLE COMPANY, Hartford, Conn.

NEW YORK BRANCH: Electric Vehicle Company, 134-136-138 West 38th Street.
CHICAGO BRANCH: Electric Vehicle Company, 1332-1334 Michigan Avenue.
BOSTON: The Columbia Motor Vehicle Company, Trinity Place and Stanhope Street.

GAETH

Type "XII" Touring Car

1907 Model

THE GAETH is built along the accepted lines of modern motor car construction, with special attention directed to securing ample strength in all parts. The important changes over previous models are **increased dimensions of body; the use of ball bearings in axles and wheels; three-point motor suspension; mechanically operated inlet valves; low tension ignition system, with magneto; contracting band clutch of unique design; and a new carburetor producing the highest efficiency of motor.**

SPECIFICATIONS

BODY—Side entrance, Tulip pattern.
SEATING CAPACITY—Five persons, with Pullman Seats, seven persons.
WEIGHT—2[illegible] pounds.
WHEEL BASE—1[illegible] inches
TIRES—30 [illegible]
TREAD—56 x 4½ [illegible]
STEERING GEAR—Worm and segment.
BEARINGS—Ball bearing on rear wheels
SPRINGS—Front 44 x 2 [illegible] inch, rear 50 x 2 inches
FRAME—[illegible] pressed steel.
AXLES—[illegible] rear clutch driven floating type, [illegible]
CYLINDERS—Four vertical, in pairs.
BORE—4¾ inches.
STROKE—5 inches.
HORSEPOWER—35
VALVE ARRANGEMENT—Opposite sides, mechanically operated.
MOTOR SUSPENSION—[illegible] frame, three point
COOLING—Water, with honeycomb radiator and fan.
IGNITION—Make and break.
CURRENT SUPPLY—Magneto.
CARBURETOR—Automatic, float feed
LUBRICATION—Force feed oiler and splash.
MOTOR CONTROL—Spark and throttle on steering wheel
CLUTCH—External contracting, leather face.
CHANGE GEAR—Sliding type
SPEEDS—Three forward and reverse
DRIVE—Bevel Gear
PRICE—$3500.00.

THE GAETH is a most excellent proposition for the dealer who wants to handle a strictly high-grade car.

Write for further particulars.

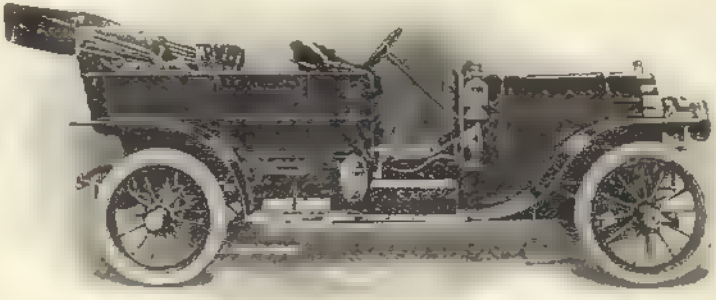
Gaeth Automobile Works

Cleveland, Ohio

Announcement 1908 GEARLESS CARS

GEARLESS Cars have "made the hit" we expected they would. Consequently our 1908 models are very slightly different from those of 1907, for they are still "The Greatest Proposition on Wheels", combining as they do tremendous power, grace, elegance and superb finish.

Gearless "GREAT SIX" *75 H. P.* *$4000*
Complete with full lamp equipment and generator



Gearless "MODEL SIXTY" *60 H. P.* *$3500*
Complete with full lamp equipment and generator

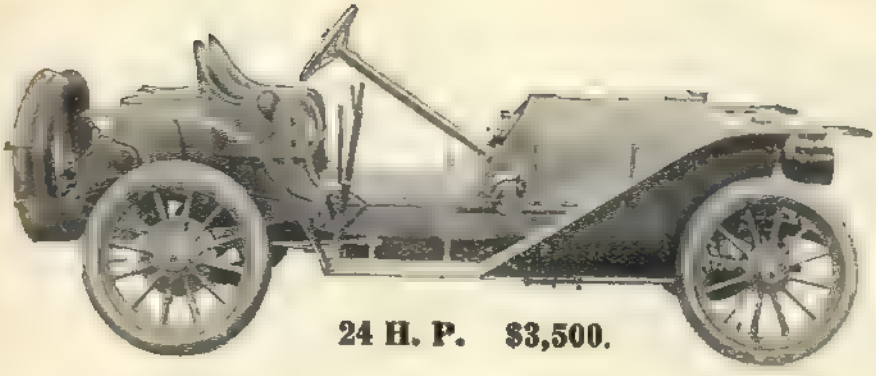
DISTINCTIVE FEATURES OF GEARLESS CARS

The largest power plant ever installed in a stock car at the price.
Reserve fuel supply of seventeen gallons.
Positive lubricating system
Double jet carbureter, assuring great economy of fuel and also capable of furnishing whatever gas is required on steep grades, abolishing carbureter adjustments
Largest radiator on the market. No danger of boiling water or overheating engine
The greatest combination of power and price ever offered
Equipped with the Gearless Transmission.

WRITE FOR CATALOGUE
So concise that in 20 minutes you will know all about GEARLESS CARS
DEMONSTRATING CARS READY FOR DELIVERY SEPTEMBER 1st

GEARLESS TRANSMISSION CO., (Motor Car Dept.) 297 PLYMOUTH AVE., Rochester, New York

B.L.M. THE GREATEST RUNABOUT IN THE WORLD



24 H. P. $3,500.

The Fastest, Strongest and Lightest Car of its Type and Horse Power, Bar None.

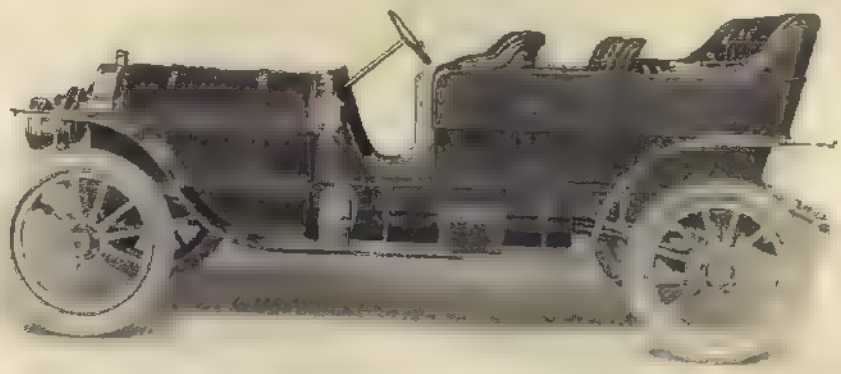
We have sold three B. L. M. cars by mail. In less than ninety days after the publication of our first advertisement our output was sold and we were in receipt of offers of large premiums for deliveries. We have never before known a car to achieve so immediate and widespread a popularity.

We would like to have propositions from successful agents in order to perfect our distribution. We would suggest early action to those who wish an opportunity to get these cars. In writing kindly address Manager, Sales Department.

B.L.M. Motor Car Co. 29 W. 42ND St. New York

The Gearless Cars

Embody MORE POWER, a higher class of workmanship, handsomer lines and a finer finish than any other line of cars in the world at the price.



The Gearless "Great Six" 75 Horse Power

The Price, $4000

Write for Catalogue and compare our SPECIFICATIONS WITH OTHERS.

Our Model 60—60 H. P. Price $3250

"The Gearless Valveless Car"

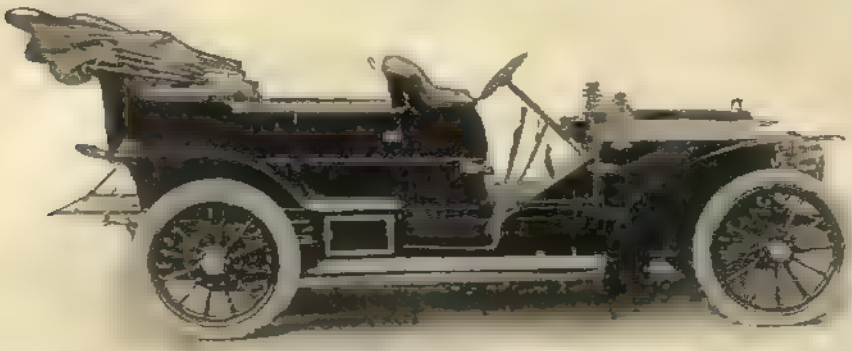
We are closing up territory rapidly. Act accordingly if you desire "The greatest proposition on wheels." Address "Motor Car Dept."

Gearless Transmission Co.

ROCHESTER, N. Y.

MATHESON

Licensed under Selden Patent.



Critical judges agree that the 1907 Matheson is equal to any car built in the world.

The Matheson is not "thrown together." It is conscientiously and accurately built of the best materials procurable.

A CAR OF ABSOLUTE PERFECTION IN EVERY MECHANICAL DETAIL.

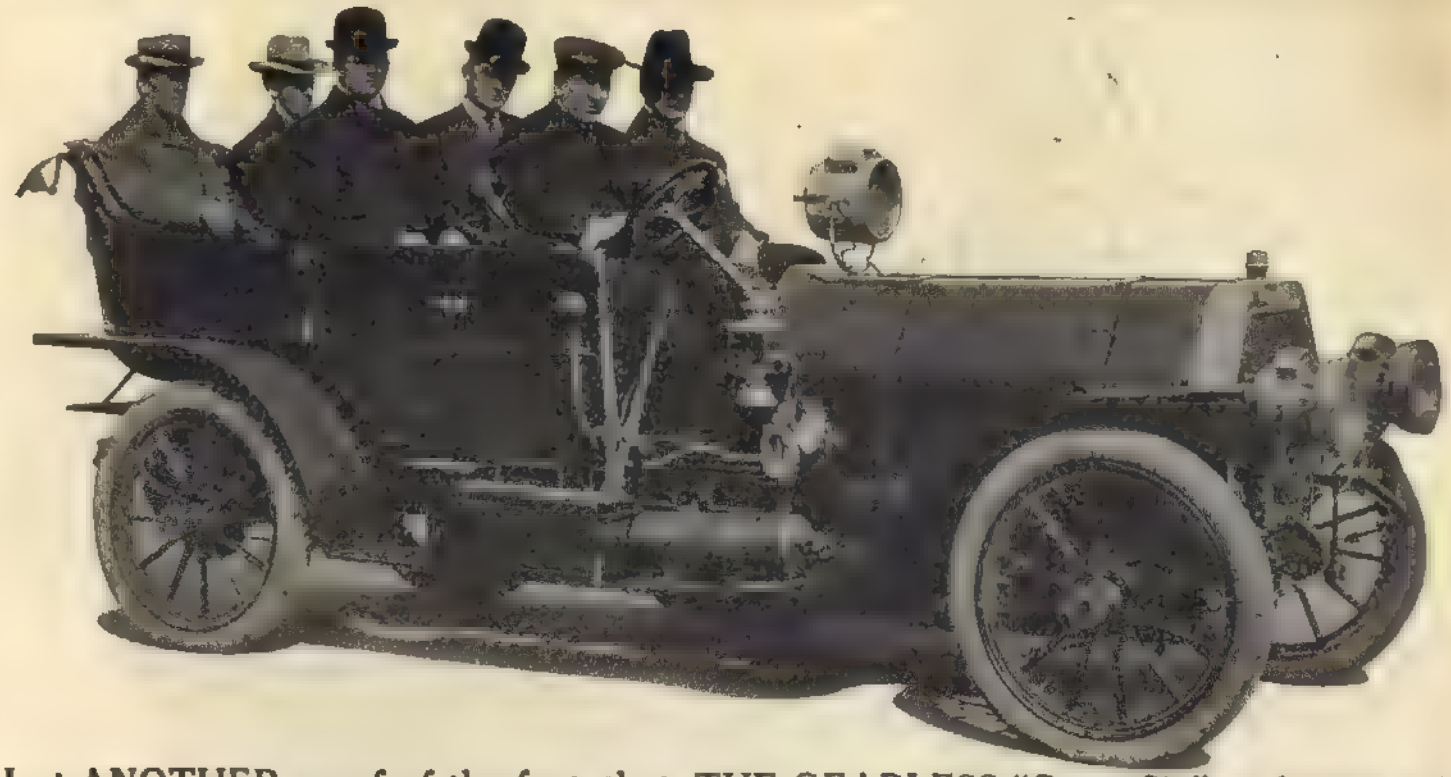
Runabouts, Touring Cars, Limousines and Landaulets.

MATHESON COMPANY OF NEW YORK

1619-21-23 Broadway. Tel. 4876 Col.

REPRESENTED IN

Chicago Ill. The Matheson Co., of N. Y., Western Branch, 1321 Michigan Ave.
Philadelphia, Pa. Pittman, Leeds & Co., Broad and Berry Sts.
Boston Mass. The Matheson Co. of Boston, 42 Massachusetts Avenue.
St Louis, Mo. The South Side Auto Co., 2338 So. Grand Ave.
San Francisco, Cal. The Matheson Co. of California, Cor. Golden Gate and Van Ness Aves.
Rochester, N. Y. Rochester Automobile Co., 160-170 South Ave.
Albany, N. Y. Albany Garage Co., 28-30 Howard St.
Binghamton, N. Y. H. D. Canton Auto Co.
Cleveland, O. Central Auto & Supply Co.
Watertown, N. Y. Watertown Auto. & Supply Co.
Newark, N. J. The Matheson Co. of New Jersey, 9 Clinton St.
Jersey City. Hudson County Auto Co.
Long Branch, N. J. Long Branch Auto Co.
Baltimore, Md. The Matheson Co. of Maryland. R. E. Wood Lumber Co.
Richmond, Va. Motor Transfer Co.
Calgary, Alberta, Canada. A. S. Urquhart.



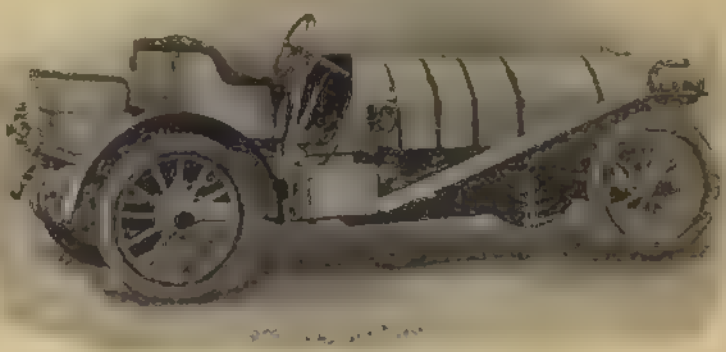
Just ANOTHER proof of the fact that THE GEARLESS "Great Six" at $4000, 75 H. P. is the "Best proposition on wheels"

GEARLESS TRANSMISSION CO., Rochester, N. Y.

Gearless Greyhound

The Thoroughbred Roadster

A car that creates a genuine sensation wherever shown. It fairly bristles with original features and possesses the most distinctive lines, combining speed, power and style to the last degree.



1908 MODEL

Speed, 75 Miles *Price, $4000*

SPECIFICATIONS:

SEATS—Three.
WHEEL BASE—126 in. **GAUGE**—56 in.
TIRES—Front 36 in. x 4 in.
TIRES—Rear 36 in. x 4 in.
BRAKES—4 on rear wheels. 2 internal expanding. 2 external contracting. 2 hand brakes on transmission operated by foot pedals.
SPRINGS—39 in. front 50 in. rear. Semi elliptical.
HORSE-POWER—75 at 1350 R. P. M.
BORE 4½ in. **STROKE**—5½ in.
CYLINDERS—6-4 cycle.
VALVE ARRANGEMENT—Opposite inlets.
COOLING—Water cooled. Honeycomb radiator.
IGNITION—Jump Spark. Two sets of plugs.
CURRENT SUPPLY—Bosch high tension magneto. Storage Battery reserve.
LUBRICATION—Delaney Belleville System. Absolutely positive at all times.
CLUTCH Internal expanding ring.
CHANGE GEAR—Gearless Transmission.
SPEEDS—2 forward and reverse.
DRIVE Direct on high speeds. Frictional on low and reverse.
BEARINGS USED—Crankshaft, Parson's white brass. Wheels Front, Balls Wheels Rear Hyatt Rollers Transmission, Balls.
SPECIAL STEELS USED—Nickel steel in rear axles and propeller shaft.

WE MAKE OTHERS, TOO.

WRITE FOR CATALOG, IT TELLS MORE

Gearless Transmission Co. (Motor Car Dept.)

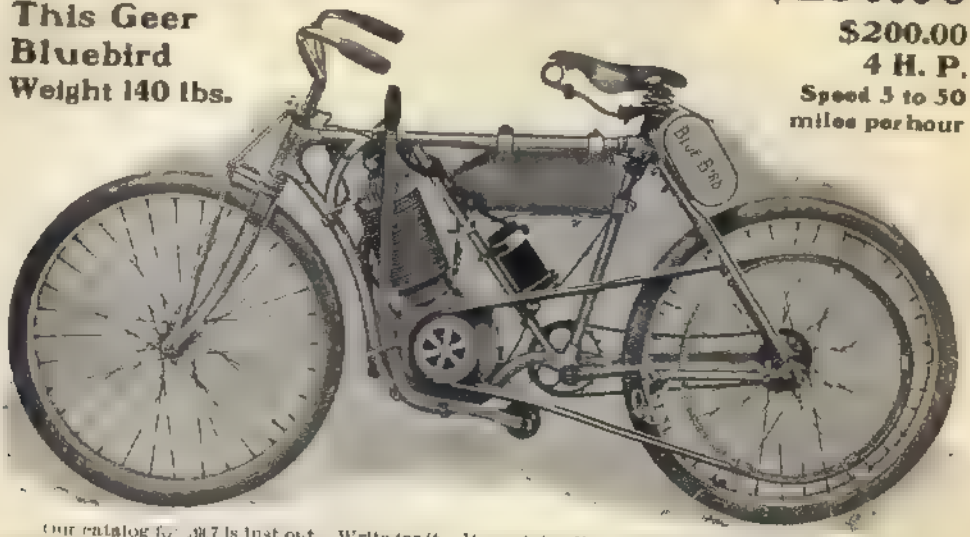
297 Plymouth Avenue, Rochester, N. Y.

NOTE: Our exhibit at Chicago November 30 –December 7 will be Section B—4, Main Floor, 1st Reg't Armory.

$40.00—MOTORCYCLES—$250.00

This Geer Bluebird Weight 140 lbs.

$200.00 4 H. P. Speed 5 to 50 miles per hour



Our catalog for 1907 is just out. Write for it. It contains the greatest bargains in new and used motorcycles ever offered, also parts and supplies of all kinds.

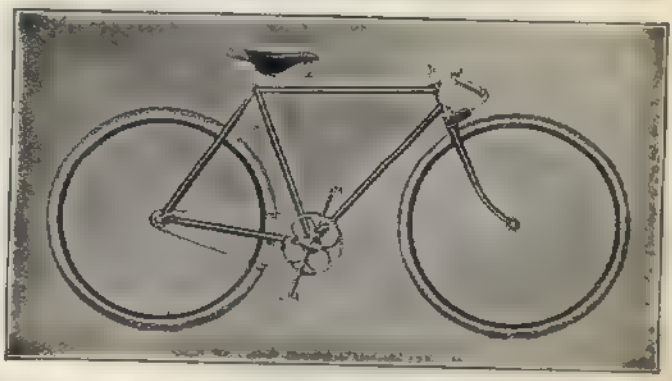
TAKE AN AGENCY. LIBERAL DISCOUNTS

Send for our outfit for converting bicycles into motor cycles (See catalog Pa. 11.) We have the best equipped repair shop in the country. Send in your machines

HARRY R. GEER CO., 856 McLaran Ave., St. Louis, Mo.

Largest Motorcycle House in the Country

1907 Yale and Snell Bicycles

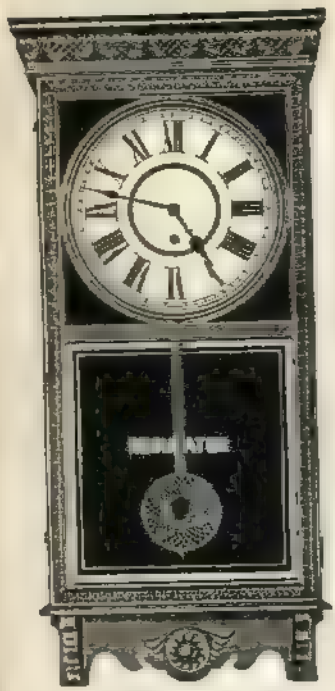


REPRESENT EXTRAORDINARY VALUE

BICYCLE DEALERS! If you want to handle a line of wheels that will prove easy sellers, secure the agency for the **"Yale"** and **"Snell"**. They have reached a point higher than that ever attained in the construction of a bicycle. It is better to sell the **"Yale"** and **"Snell"** Bicycles than to sell against this line. "A word to the wise is sufficient." Send for catalog and terms.

THE CONSOLIDATED MANUFACTURING CO.

TOLEDO, OHIO



Now is the Time

To get a

Regulator Clock

FREE

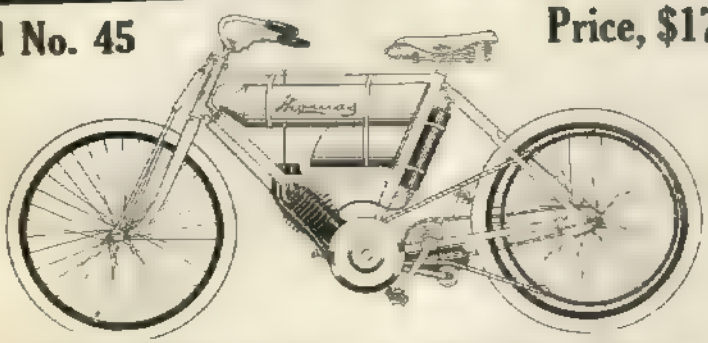
With

NEVERLEAK

A clock 8 feet high, 16½ inches wide, solid oak case, 8 day movement, guaranteed. Send us 24 Neverleak Certificates for Clock. One certificate is packed with each dozen 4 oz. tubes. Any Neverleak premium certificates will apply on clock. Twelve certificates will entitle you to a Brass Sign as heretofore.

BUFFALO SPECIALTY COMPANY
BUFFALO, N. Y.

Model No. 45 **Price, $175.00**



THOMAS AUTO-BI.

MR. AGENT.

We are prepared to prove that we have **the** motorcycle best suited to your needs, both from the buyer's and seller's stand point. **Now** is the time to close for the 1907 Thomas Agency. **There is money in it for you.**

Write for Catalogue.

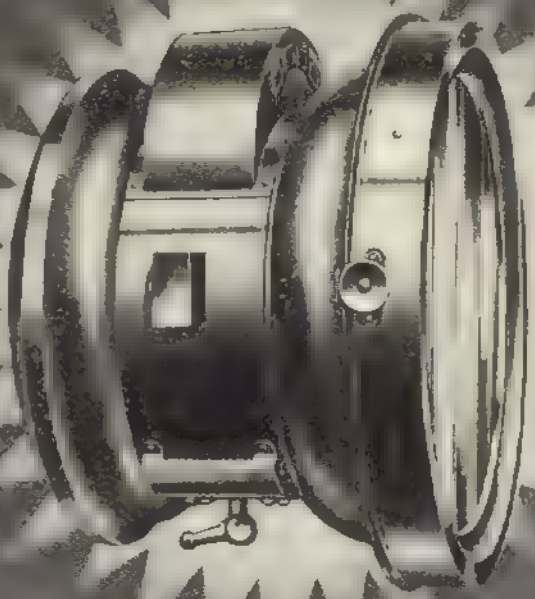
The Thomas Auto-Bi Company,

1453 Niagara Street - - Buffalo, N. Y.

GRAY & DAVIS

1908

LENS MIRROR SEARCHLIGHT



SQUARE OR STRAIGHT LINE EFFECT TO MATCH OIL SIDE LAMPS

Ever since the coming vogue of the square oil side lamp, our designers have been trying to produce a headlight that would match the business-like and artistic lines of the square line oil lamp.

A square headlight was out of the question. We have heretofore designed a square lens headlight (as looked at from the side, the point from which a car is generally seen)

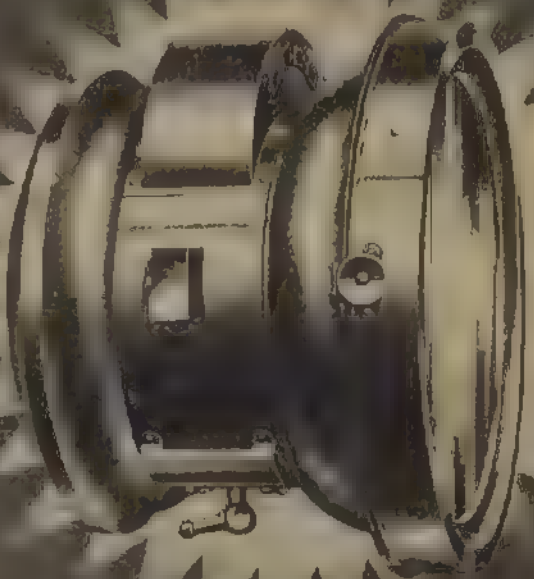
Particular attention is called to the square corners made up from straight lines, the ventilating louvers in the hood are square also, door of lamp is square. In fact every thing is in harmony, and if you have square side oil lamps you should have our 1908 headlight and the your lamp equipment will be a perfect harmony as lamp to match in every particular

GRAY & DAVIS AMESBURY, MASS.

GRAY & DAVIS

1908

LENS MIRROR SEARCHLIGHT



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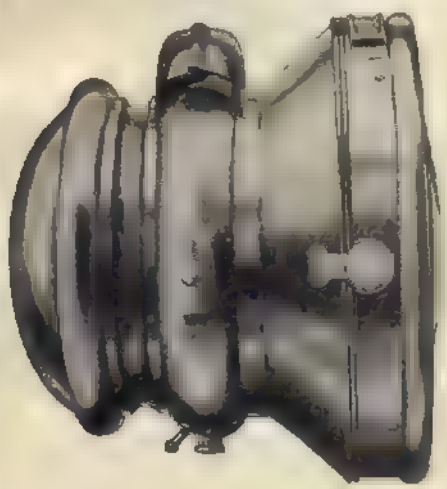
GRAY & DAVIS AMESBURY, MASS.

Select Your Lighting Equipment As Carefully As Your Engine

AN efficient lighting equipment is imperative for night running. That equipment should be as carefully selected as your engine. Unless it is absolutely dependable, unless it bears the name of a manufacturer with a reputation to uphold, it is more dangerous than no equipment for with no equipment you would not venture forth on dark, hazardous roads.

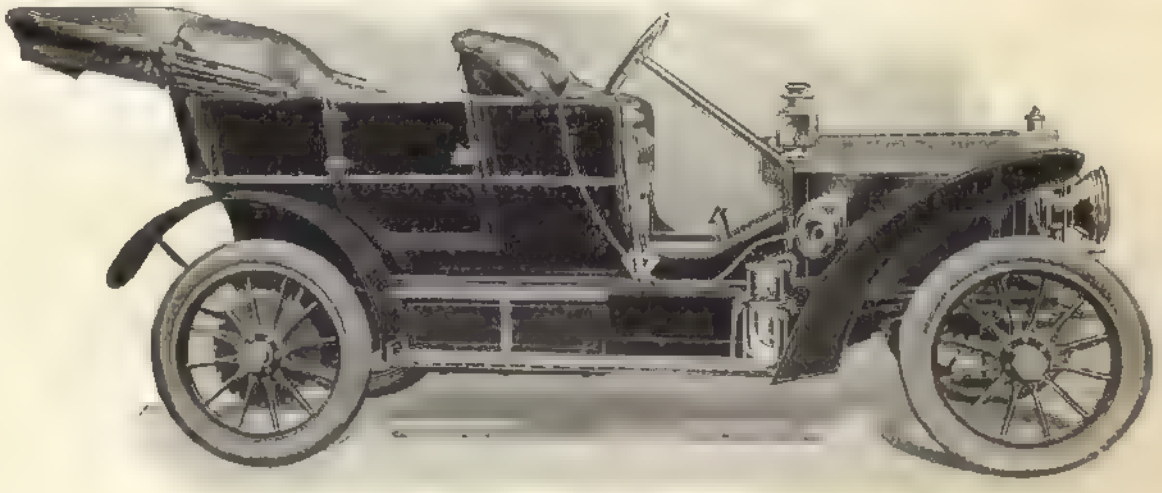


GRAY & DAVIS LAMPS

represent not only the highest attainment in the production of automobile lighting equipment, but the name is, in itself, a guarantee of honest quality and workmanship—of a reliability which elminates the element of uncertainty.

Equip your car with Gray & Davis Generator and lamp and go forth with the assurance that when you want light—**and as long as you want it**—your Gray & Davis equipment will guarantee it.

GRAY & DAVIS, AMESBURY, MASS.



"Isn't it Great?"

The Great Smith four-cylinder touring car for 1908 is just as dependable as ever, it looks just as good and it behaves just as well. These are the big things that count. Then come the little things, and this is where we have made improvements that have materially increased the general efficiency of our 1908 model.

The addition of roller bearings on the auxiliary shaft makes far less noise and more power. The tonneau door has been made two inches wider, and a quadrant has been placed over the steering wheel giving better control of the throttle and spark levers.

Price, Including Lamp Equipment - $2,650.00 Price, Including Lamp Equipment and Pantasote Top : $2,775.00

OUR 1908 LITERATURE IS NOW READY

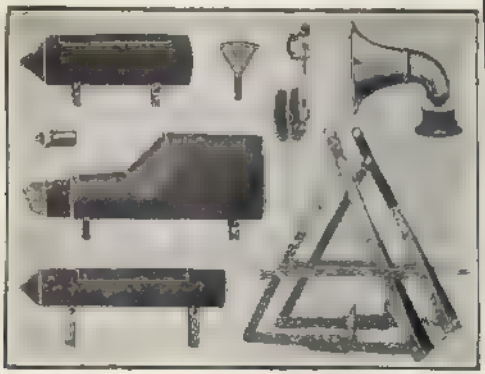
SMITH AUTO COMPANY, *Manufacturers,* **Topeka, Kansas, U. S. A.**

THE SMITH MOTOR CAR CO., Sole Distributors

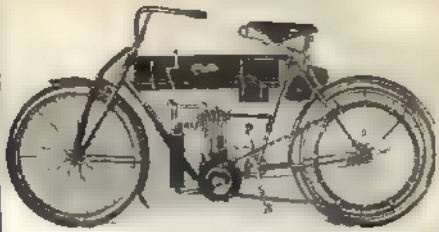
Motor Cycle Specialties

Tool Boxes, Battery Cases, Stands and Luggage Carriers, Idlers, Electric Horns, Lamp Brackets, Cyclemeter Brackets, Pocket Funnels, Etc.

Indian and Yale Motorcycles
PARTS AND REPAIRS.



Send for Catalogues of 40 Specialties, Etc.
F. B. WIDMAYER, 2312 Broadway, N. Y. City



CURTISS
1907 Single Cylinder

The general purpose machine.

Surplus of power. Easy riding, on account of long wheel base and motor position. Extremely durable. Roller bearing engine. Send for catalogue A, which also describes our double cylinder motorcycle and line of light and powerful motors. Address,

G. H. Curtiss Mfg. Co.
HAMMONDSPORT, N. Y.

Who would think of building Bicycles, Coaster Brakes, Lawn Mowers, Sewing Machines and etc., etc., without using The STAR BALL RETAINERS therein?

W H O , tell us!

THE STAR BALL RETAINER CO.
LANCASTER PA., U. S. A. and BERLIN S. O. 36, GERMANY

Hine-Watt Manufacturing Co.
INCORPORATED
Manufacturers of
Columbia Automatic Gas Lamps for Automobiles and Bicycles
58-60 Wabash Ave., Chicago, Ill

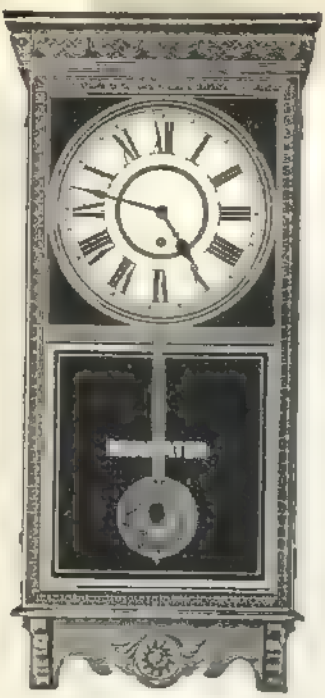
THE A. & J. MANUFACTURING CO.
Sole Manufacturers, **THE ORIGINAL A. & J. Repair Hanger and Braziron.**
The best cast iron brazing compound.
Special motor cycle bracket and hanger for builders.
26 W. Randolph St., Chicago, Ill.

Mesinger New Cavalry Motor Saddle

Built on the style of a cavalry saddle on which the rider cannot slip forward or backward.

We express samples prepaid to manufacturers and jobbers on application.

H. & F. MESINGER MFG. CO.
1801-1807 First Ave., New York



FREE! FREE! FREE!

Regulator Clock.

WHY not get this thoroughly reliable, guaranteed Regulator Clock at once and have the benefit of it. We will send it to you entirely free for only 24 Neverleak Certificates. The clock is over 3 ft. high, 16½ in. wide, has solid oak case and 8-day movement. "Brass Sign" certificates will apply on clock. One certificate with each dozen 4 oz. tubes of Neverleak. Twelve certificates will entitle you to a Brass Sign as heretofore.

BUFFALO SPECIALTY COMPANY,

BUFFALO, N. Y.

GEER GREEN EGG MOTORCYCLE

5 H.P. Two-cylinder

Price $225.00

Liberal discount to dealers.

Old machines taken in exchange.

We furnish castings for eight different motors, 1¾ H. P. to 5 H. P., air and water-cooled. Our motor-cycle catalogue is one of the most complete ever issued. Write for copy.

SECONDHAND MOTORCYCLES $40.00 UP.

Write for list No. 125 of seventy machines

Harry R. Geer Company,

856 McLaran Ave., St. Louis, Mo.

Automobile Wrenches!

LOOK NO FURTHER!

Write for prices and samples of the **Lightest, Strongest, most Serviceable, Tempered Steel Wrenches** ever designed. Address

ONWARD COMPANY,

Formerly E. T. Harris

531 to 551 West 15th St., CHICAGO, ILL.

THE ORIGINAL.

THE SARTUS

Ball Retainer

(Brought Out in 1896)

BEST ANTI-FRICTION

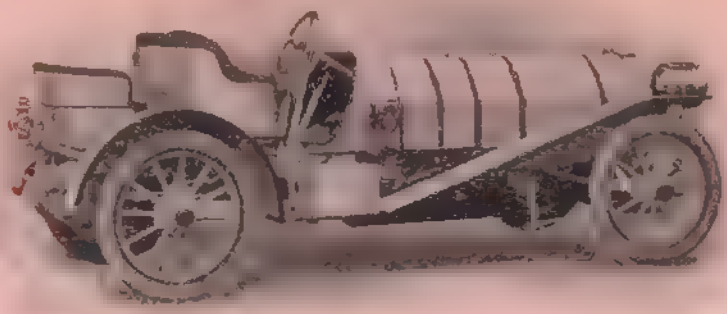
THE SARTUS BALL BEARING CO.

155 Spring Street, NEW YORK CITY

Gearless Greyhound

The Thoroughbred Roadster

A car that creates a genuine sensation wherever shown. It fairly bristles with original features and possesses the most distinctive lines, combining speed, power and style to the last degree.



1908 MODEL

Speed, 75 Miles *Price, $4000*

SPECIFICATIONS

SEATS—Three.
WHEEL BASE—125 in. GAUGE—56 in.
TIRES—Front 36 in. x 4 in.
TIRES—Rear 36 in. x 4 in
BRAKES—4 on rear wheels. 2 internal expanding. 2 external contracting. 2 band brakes on transmission operated by foot pedals.
SPRINGS—39 in. front, 50 in. rear. Semi-elliptical.
HORSE-POWER—75 at 1350 R. P. M.
BORE—4¼ in. STROKE—5½ in.
CYLINDERS—6-4 cycle.
VALVE ARRANGEMENT—Opposite in ports
COOLING—Water cooled. Honeycomb radiator.
IGNITION—Jump Spark. Two sets of plugs.
CURRENT SUPPLY—Bosch high tension magneto. Storage Battery reserve.
LUBRICATION—Dc Lamey-Bellevue System. Absolutely positive at all times.
CLUTCH—Internal expanding ring.
CHANGE GEAR—Gearless Transmission.
SPEEDS—2 forward and reverse.
DRIVE—Direct on high speeds. Frictional on low and reverse.
BEARINGS USED—Crankshaft, Parson's white brass. Wheels Front, Balls Wheels Rear, Hyatt Rollers. Transmission, Balls.
SPECIAL STEELS USED—Nickel steel in rear axles and propeller shaft.

WRITE FOR CATALOG, IT TELLS MORE

Gearless Transmission Co. (Motor Car Dept.)

297 Plymouth Avenue, Rochester, N. Y.

NOTE We will exhibit only at the "All America" Show, Grand Central Palace, New York, Oct. 24 to 31.

Headquarters for Bicycle and Automobile
Lamps and Generators
AUTOMOBILE SUPPLIES
Hine-Watt Manufacturing Co.
8-60 Wabash Ave., Chicago, Ill.

BICYCLES and BICYCLE SUPPLIES
Seldom Equalled
Never Excelled
Manufacturers' Supplies Co.
418 ARCH STREET, Philadelphia, Pa.

The HARLEY-DAVIDSON MOTORCYCLE
A winner wherever it competes.
Prompt deliveries guaranteed.
HARLEY-DAVIDSON MOTOR CO.
MILWAUKEE, WIS.

TORPEDO MOTOR CYCLE
Winner of perfect score in Chicago-Kokomo 415 mile Endurance Run
New models exhibited at Chicago Auto Show
The HORNECKER MOTOR MFG. CO.
WHITING, IND.

The Reliance
Best Motor Cycle Proposition in the world :: :: ::
RELIANCE MOTOR CYCLE CO.
ELMIRA, N. Y.

IT ISN'T LUCK
That the
CURTISS Motorcycle

entered in the Endurance Run won the Diamond Medal, the highest award for multi-cylinder motorcycles, maintaining the best average [illegible] reliability, hill-climbing and economy against a field of six other American and foreign cars.

It isn't LUCK that the Curtiss in the 998 cubic inch class in the speed trials with the average less than the FIRST and SECOND, beating its nearest competitors with equal cylinder capacity by seconds and making a WORLD'S RECORD of a mile in 55 4

It isn't LUCK that in the 61 cubic inch class the CURTISS DOUBLE [illegible] won easily And the same applies in the hill climb and track events where the Curtiss machines fully demonstrated their superiority

Write for our booklet "Achievements"

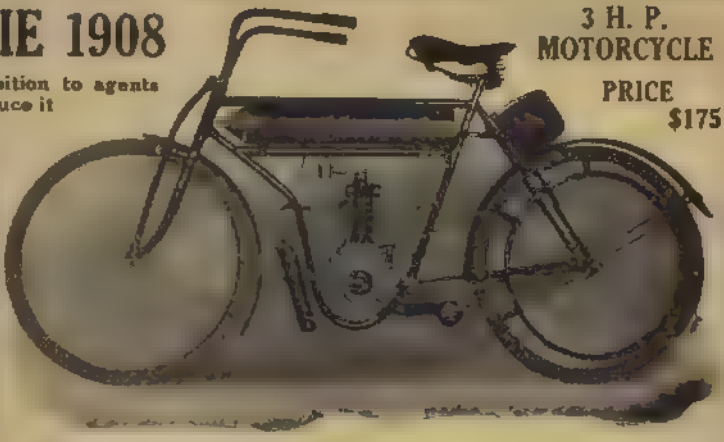
G. H. CURTISS MANUFACTURING CO.
HAMMONDSPORT, N. Y.

THE ERIE 1908
Most liberal proposition to agents to introduce it

SPECIFICATIONS:
Stitched non-stretch [illegible] wide flat belt [illegible] Carbureter with throttle and spark control. Write for [illegible] choice of three gear ratios. GUARANTEED [illegible] IMMEDIATE DELIVERY. [illegible]

MOTORCYCLISTS
[illegible] for our new book "THE MOTORCYCLE" [illegible] tells about the business, and explains how to get into it, [illegible] make from motorcycles for your personal use. Also tells

Write to-day for Catalogue and special prices



3 H. P. MOTORCYCLE
PRICE $175

Motorcycle Equipment & Supply Co., 3 Lake St., Hammondsport, N. Y.

THE "HALL" CARBURETER

Powerful—Dependable—Economical

All Sizes

A critically tested and proven Garbureter, used exclusively for over a year, and now being used by one of the largest manufacturers, making 1500 high-grade automobiles per year.

We also manufacture a full line of Automobile and Bicycle Wrenches.

CHARLES E. HALL COMPANY, Manufacturers
Buffalo, N. Y., U. S. A. (106 Broadway).

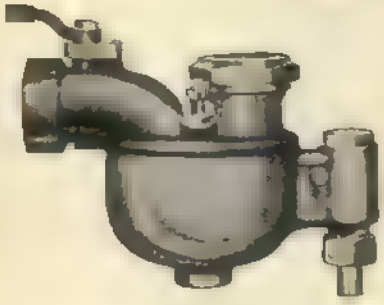
PARTICULARS ON APPLICATION.

Announcement

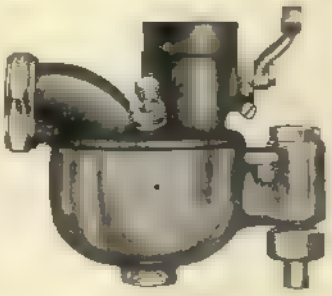
of the

Holley 1908 Carburetor

(PATENTS APPLIED FOR.)



Side Outlet



Top Outlet

An Automatic Carburetor Without Moving Parts.

For years we have been working to perfect an automatic carburetor which should avoid the unreliable springs and delicate moving parts of the ordinary types, and which should require no skill to adjust and keep in order.

Now we have it!

In the 1908 Holley Carburetor, now offered to the public, the only movable parts are the float and the throttle valve. Automatic action is obtained solely by the special shape of the mixing chamber and the arrangement of the spray orifice. Thus at a stroke we achieve an automatic carburetor as simple as the simplest non-automatic.

There is only one adjustment—a needle regulating the spray opening. Even the novice can easily adjust it, and, once set, the mixture cannot possibly go wrong.

Tests have shown the fuel consumption to be very low and the horsepower developed correspondingly high. The essential feature of an automatic carburetor—flexibility—is obtained to an extraordinary degree, it being possible to run the motor very slowly.

Write for full particulars.

HOLLEY BROTHERS COMPANY,

Detroit, Michigan.

THE "HALL" CARBURETER

Powerful—Dependable—Economical

All Sizes

A critically tested and proven Garbureter, used exclusively for over a year, and now being used by one of the largest manufacturers, making 1500 high-grade automobiles per year.

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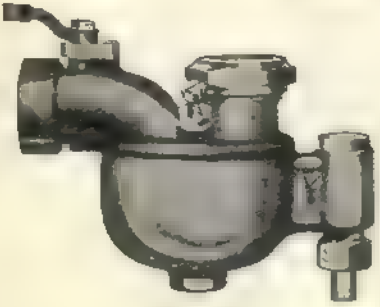
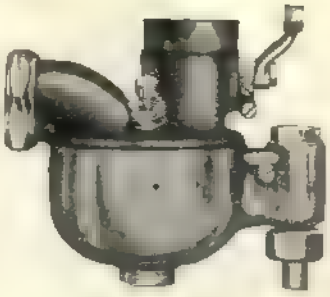


Side Outlet



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We also manufacture a full line of Automobile and Bicycle Wrenches.

CHARLES E. HALL COMPANY, Manufacturers
Buffalo, N. Y., U. S. A. (106 Broadway).

PARTICULARS ON APPLICATION.

Ham's Famous "COLD BLAST" Auto Lamps

Represent all that can possibly be desired in Automobile Lamps, viz:—

Immense Light,
Excellent Burning Qualities,
Heavy Gauge Material,
Strength of Construction,
Style and Finish.

We are the Originators and Patentees of the Genuine "Cold Blast" principle, which is the only known method to obtain perfect combustion for outdoor lamps, that's why we can guarantee our lamps not to blow or jar out

HAM'S ROCHESTER

We will exhibit at the Chicago Show "Space 143."

Don't place your orders until you have seen our 1908 line.

HAM'S TOURIST

Manufacturers,
Jobbers,
Dealers,
and Users.

It you are interested in the best Automobile Lamps on the market, lamps that are guaranteed to give satisfaction don't fail to call and let us demonstrate

Why Ham's "Cold Blast" Lamps are Superior to any other make of lamps on the market.

Also write for one of our 1908 catalogues. Address, "Dept. D."

C. T. Ham Mfg. Co.

ROCHESTER, N. Y.

John H. Graham & Co., Agents
113 Chambers St., New York, N. Y.

Ham's Famous "COLD BLAST" Auto Lamps

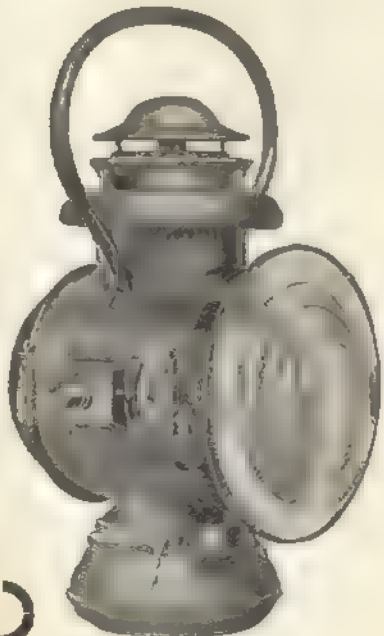
will be on exhibition at the New York Shows, where we will be pleased to see all our friends.

Manufacturers,
Jobbers,
Dealers,
and Users.

Don't place your orders until you have seen our 1908 line.

HAM'S ROCHESTER

Call and let us demonstrate why Ham's Lamps are superior to any other make of lamps on the market.



HAM'S TOURIST

Our exhibits will be as follows :—

In Section B, Space 139, Grand Central Palace, October 24th to 31st.

In Concert Hall, Madison Square Garden, November 2nd to 9th.

Also at the Chicago Show to be held in December.

If you are interested in the best Automobile Lamps on the market, lamps that are guaranteed to give satisfaction, it will pay you to make us a visit, also write for our new catalogue. Address Dept. D.

C. T. Ham Mfg. Co.

ROCHESTER, N. Y.

John H. Graham & Co., Agents
113 Chambers St., New York, N. Y.

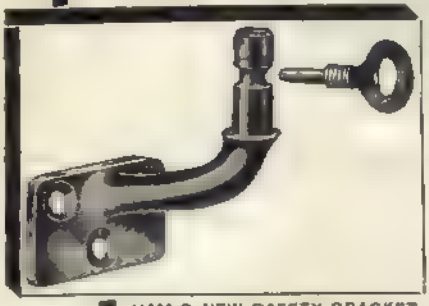
NO MORE FINES

THE BEST TAIL LAMP ON THE MARKET

For Driving without your Tail Lamp Lit

If you equip your car with one of Ham's and it will save you a great deal of trouble annoyance and expense. The Vigilant illustrated herewith is our most popular tail lamp. It is absolutely wind proof, will not jar out and can be relied on to give steady bright service any and all conditions. Besides the red light for rear signal it gives a powerful white light for the number plate. It makes it very handy and convenient for inspection engage at least a break down. It is fitted with our new safety locking bracket which does away with the constant annoyance of losing your lamp or having it stolen.

Write for our new catalogue which will interest you



HAM'S NEW SAFETY BRACKET

HAM'S VIGILANT TAIL AND INSPECTOR LAMP

C. T. Ham Manufacturing Co.

731 OAK ST., ROCHESTER, N. Y.

Actual Size

How Far Can You READ This?

Hold it Away From You and See

Found on 90 per cent. of all GOOD Cars. Look on the dash-board and prove it.

It's the scale of **The Warner Auto-Meter** actual size. It says on Automobile instruments all it can be. It is just as stands on your car as it is on the scale of

The Warner Auto-Meter

is not influenced by the size of the car—speed alone moves it. It does not register the vagaries of carburetors or ignition and are not certain with their accuracy.

Let us tell you more about this wonderful instrument—how its new, wireless, fine jewel-like watch clock is so strongly built that it takes out all shock or break that might damage it, how we use the magnet in the only practical way which makes **The Auto-Meter** as reliable as a marine chronometer.

Let us **prove** to you the good reasons why our **Guarantee** of **The Auto-Meter** is better than any other manufacturer has ever dared or ever will dare to make.

Write us **The Model** of **Power** of your car and we will send you full information about **The Auto-Meter** with price ready to install on the dash board.

THE WARNER INSTRUMENT CO., 679 Roosevelt St., Beloit, Wis.

The Auto-Meter is sold by all Dealers and at the best Garages.

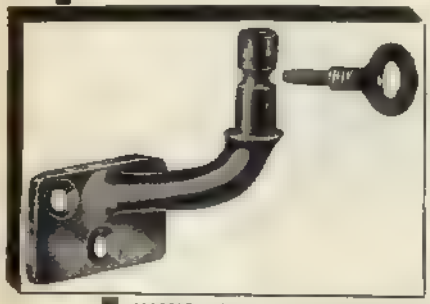
NO MORE FINES

THE BEST TAIL LAMP ON THE MARKET

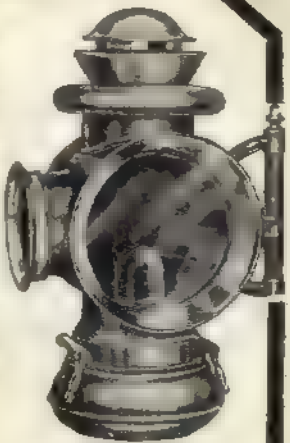
For Driving without your Tail Lamp Lit

If you equip your car with one of Ham's and it will save you a great deal of trouble annoyance and expense. The Vigilant illustrated herewith, is our most popular tail lamp it is absolutely wind proof, will not jar out and can be relied upon to stay alight under any and all conditions. Besides the red light for rear signal, it gives a powerful white light and the ring handle makes it very handy and convenient for inspecting engine or car in case of a break down. It is fitted with our new Safety Locking Handle which does away with the constant annoyance of losing your lamp or having it stolen.

Write for our new catalogue it will interest you



HAM'S NEW SAFETY BRACKET



HAM'S VIGILANT TAIL AND INSPECTOR LAMP

C. T. Ham Manufacturing Co.

731 OAK ST., ROCHESTER, N. Y.

PENNSYLVANIA

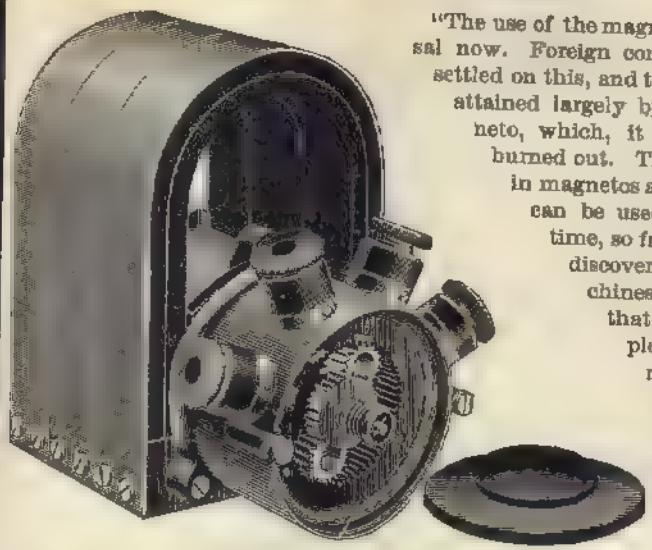
BUILT TO USE.

A carefully constructed motor car for continued use—over our questionable roads—35 H. P., 2500 pounds—$2800.00. The mechanical construction and refinement are set forth in a catalogue sent upon request.

PENNSYLVANIA AUTO MOTOR CO.

BRYN MAWR, PA.

Opinion of an American Expert, Attending the Paris Show.



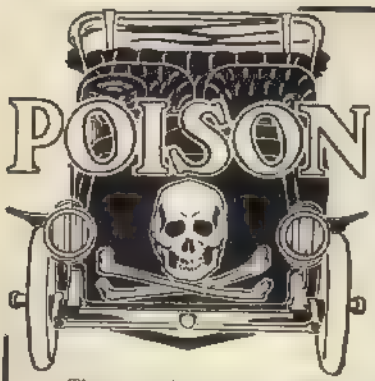
Gianoli High-tension Magneto.

"The use of the magneto is practically universal now. Foreign constructors seem to have settled on this, and to my mind this has been attained largely by the new Gianoli magneto, which, it is claimed, cannot be burned out. This is a big improvement in magnetos and is the only one which can be used successfully for a long time, so far as I have been able to discover, on six-cylinder machines. I was told at the show that the Stevens-Duryea people had ordered this magneto to be placed in their six-cylinder cars.

Above is an extract from the article by C. W. Kelsey, in the *January 10th issue of "Automobile."*

Albert Champion Co., Manufacturers and Importers,

525-545 Tremont St., Boston, Mass.



It is just as sensible to put poison into your system as to put into your motor car a lubricating oil that is going to make it steadily deteriorate every day of its use until the car is utterly WORTHLESS.

What pure blood is to the health of your body the RIGHT lubricating oil is to the health of your car.

Your car cost you some thousands of dollars, yet you have been letting it go steadily down—letting its VALUE leak away day by day—because you have not realized the importance of proper lubrication, but have accepted and used whatever oil has been given you. In a very little while your car will be worthless if you do not furnish it with proper lubrication.

The heat caused by the exploding gases in the cylinders evaporates the oil, leaving a deposit of carbon. This carbon deposit, steadily growing, prevents perfect lubrication more and more, and in a very, very little while, your car begins to actually wear out, to grind away then you have no longer the car for which you paid, but a loose-working, rattley, shakey, WORN-OUT car that breaks down in some part every little while, a car that costs a fortune in repair bills, so that you will soon be glad to GIVE it away

The same end is reached by a different cause the inability of the lubricating oil you use to withstand heat. Oil which will not resist heat will not lubricate properly. Without proper lubrication there is a constant grinding of the delicately machined parts upon themselves. How long do you think they will last this way? The result is the same—a splendid car gone to rack and ruin because of ignorance and neglect on the part of the owner.

The ONLY oils that DO resist heat to so great an extent as to preserve your car from this constant deterioration are Havoline Oils. The ONLY oils that are so FREE from carbon as to be perfect for Automobile lubrication are Havoline Oils. Havoline Oils show by Carbon Tests that they deposit less carbon and by Fire Test that they resist evaporation by heat far more than any other oil in the market. Havoline Oils are what you MUST use if you would preserve the dollars you put into your car.

Manufacturers of over 50 per cent of the cars in this country, have, after exhaustive tests, adopted Havoline Oils for use in their cars; furthermore, they recommend Havoline Oils to all owners of their cars. THAT tells the story.

Write for our Booklet A on lubrication. It is free and it will tell you some great truths about lubrication that will save you hundreds of dollars in the value of your car.

Havoline Oil Company

HAVOLINE MOTOR OILS

80 Broad Street New York

HAYNES

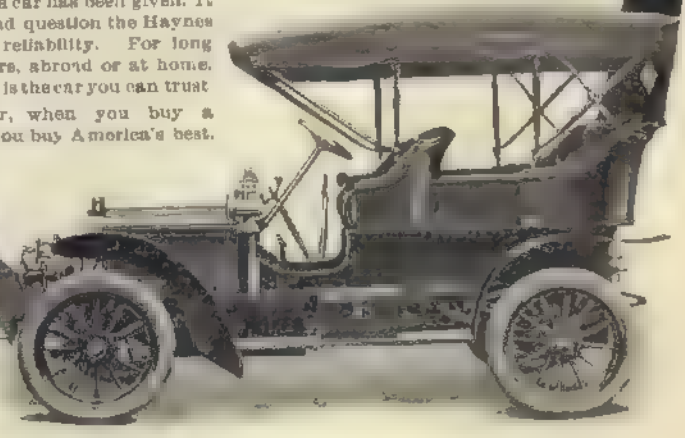
FOR A LONG TOUR

In foreign lands—along the Riviera or the Valley of the Rhine or through the far West your car must be one you can trust. Examination is not surety enough—you can't see the quality of steel. Practical tests are not severe enough. The only test you can rely on is the reputation of the **makers** and the **car.** Here are two significant facts:

The Makers of the Haynes Automobile built the first American gasoline car, erected the first American automobile factory, and have been making Haynes cars for **thirteen years.**

A regular **stock model** won its place on the American team in the Vanderbilt Cup Race against special cars of foreign design, and in the subsequent test, its perfect regularity and wonderful endurance were the feature of the day. No harder test of a car has been given. It proved beyond question the Haynes quality and reliability. For long or short tours, abroad or at home, the Haynes is the car you can trust.

Remember, when you buy a Haynes you buy America's best.



MODEL S.

50-H. P. simplified control, exclusive transmission and rear-axle construction that makes possible shaft drive despite the high power. Roller bearings throughout.

Price $2,500

Other models of 50-H. P., $3,500.

For catalogue address desk G 16.

HAYNES AUTOMOBILE CO., Kokomo, Ind.

Oldest Automobile Manufacturers in America.

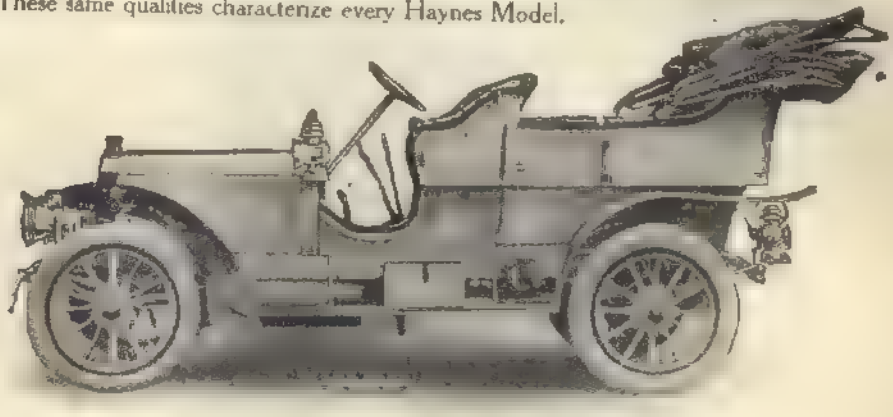
Members A. L. A. M.

New York: 1715 Broadway. Chicago: 1420 Michigan Ave.

HAYNES

Why the Haynes is First

The Haynes factory was the first automobile factory to be built in America (1893).
The Haynes was the first to adopt low tension make-and break ignition (1895).
The Haynes was the first to use nickel steel and aluminum alloy in a car.
The Haynes was the first to adopt side entrance bodies and large wheels.
The Haynes *is* first to adopt the roller pinion and bevelled sprocket direct drive, making possible the combination of shaft drive and high power.
The progressiveness of the Haynes made possible a stock car such as was seen in the Vanderbilt cup Race. Against foreign and American cars of twice its horsepower the Haynes made a record for speed regularity and reliability that was remarkable.
These same qualities characterize every Haynes Model.



The Haynes Standard 50 H. P. Touring Car for 1907, Model "T," the Highest powered shaft driven car built. Price $3,500

35 H. P. Model $2,500.

Send at once for full information and specifications. **Address Desk, G 13**

HAYNES AUTOMOBILE CO., Kokomo, Ind.

Oldest Automobile Manufacturers in America. Members A. L. A. M.

New York—1715 Broadway **Chicago—1420 Michigan Avenue**

HAYNES

HAYNES

FOR A LONG TOUR

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A regular **stock model** won its place on the American team in the Vanderbilt Cup Race against special cars of double its power, and in the Glidden Tour perfect regularity and wonderful endurance were the features of the day. No harder test of a car has been given. It proved beyond question the Haynes quality and reliability. For long or short tours, abroad or at home, the Haynes is the car you can trust.

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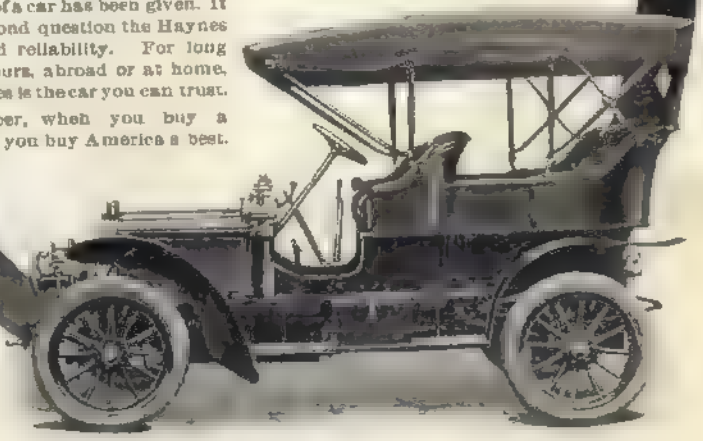

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30-11 P. simplified control, exclusive transmission and rear-axle construction that makes possible shaft drive despite the high power. Roller bearings throughout.

Price $2,500

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For catalogue address desk G 18.

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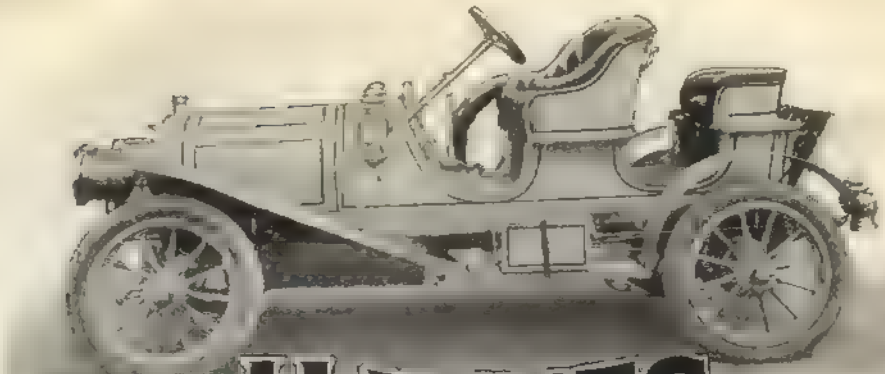
Oldest Automobile Manufacturers in America.

Members A. L. A. M.

New York: 1715 Broadway. Chicago: 1420 Michigan Ave.



HAYNES

The New Semi-Racer Proves Itself

After it had been on the market less than a month the new Haynes Semi-Racer won its first competitive test in the 200 Mile Endurance Run of the New York Motor Club, June 6th. Over roads which recent rains had put in horrible condition, under conditions that required an average of 20 miles an hour, a very high average for touring, this Haynes Runabout won in its class. It reached its destination at Albany ahead of time, and in fact through a mistake of the timing was permitted to cross the line too early and was penalized. Experienced drivers said that the run was the hardest endurance test which had ever been held in this country for stock cars.

The Haynes led all the cars during most of the race, beating the high powered touring cars at most of the controls.

The chassis of this car is the same as our Model "S" touring car with all the improved and advanced features which have made our 1907 models famous. It has the patented roller pinion and sprocket direct drive, solving satisfactorily the old problems of rear-axle strains.

It is impossible for the driver to injure the car by careless or rough handling, because the master clutch cannot be made to take hold otherwise than softly, and the exclusive transmission control allows change of gear without releasing the clutch by a single movement of the hand with no possibility of burning or stripping the cogs. The Haynes positive cooling system makes overheating unknown.

Unlimited speed, perfect comfort, a silent engine, a transmission, and snappy style, and a name that is thirteen years old—these are what can be had in this new semi-racer.

No one can doubt the supremacy in its class of **"the latest model from the oldest maker."** Price $2,500.

OTHER MODELS:

Model "T", the Vanderbilt Cup Racer Chassis, 50 H. P. Touring Car, seating 7, $3,500.

Model "S", 30 H P. Touring Car, seating 5, $2,500.

For catalogue address desk G 17.

HAYNES AUTOMOBILE CO., Kokomo, Ind.

Oldest Automobile Makers in America

Members A. L. A. M.

NEW YORK, 1715 Broadway 1420 Michigan Ave., CHICAGO

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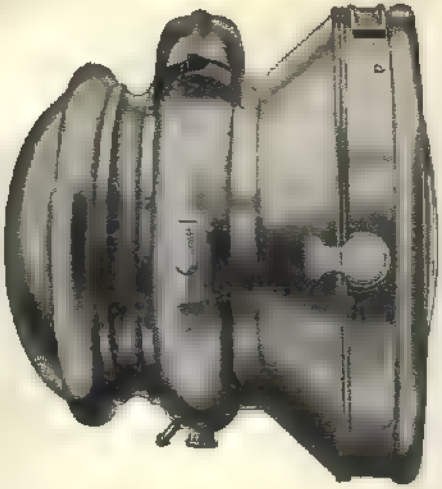


This Lamp Combines The Pencil and Fan Rays

That clear, keen, penetrating shaft of light known technically as the "pencil" ray, and the softer, effulgent spreading "fan" ray we have successfully combined in the single lamp illustrated herewith.

The advantages of such a combination are obvious to every lamp user—giving in a single lamp the long-distance illumination of the "searchlight" as well as the lighting of the immediate vicinity of the car.

Send for catalog of complete line.

Lamp Illustrated, No. 65.

GRAY & DAVIS

Amesbury, Mass.

The "Healy" Leather Motor Cycle Tire

The Healy Leather Tire Co., 88 and 90 Gold street, New York City, has recently placed on the market a tire for motorcycles, constructed after the well known Healy principles used in their automobile tires.

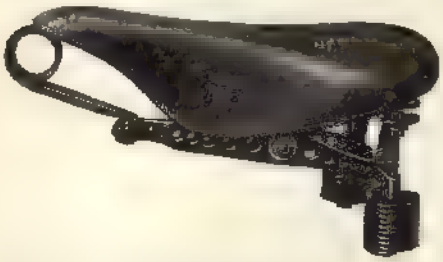
Two rows of steel studs are fitted on the tread of the tire, which give it its non-skidding qualities. It is also claimed to

The "Healy" Leather Motor Cycle Tire.

prevent punctures, blow-outs and rim cuts. The tire is made for single or double clincher rims, and to order when wanted for Dunlop rims. The stock tires are made flat. Moulded tires will be furnished if required. The tire is made in sizes from 26x1¾-inch, listing at $20.00 to $26 for a 30x2½-inch tire.

New Mesinger Motor Cycle Saddle

H. & F. Mesinger Mfg. Co., 1801 First avenue, New York, have added a new motorcycle saddle to their extensive line for the 1908 season, called the "Standard." The top is of soft flexible leather, re-in-



The New "Standard" Motorcycle Saddle just brought out by the Mesinger people.

forced to prevent sagging. The re-inforcement is of half rawhide tanning, which reduces stretching to a minimum.

The front suspension spring has a very free action and the same wide limit of motion as the rear compression and extension springs. The rear spring is guided to stay in the center of the coil spring preventing the coils from snapping. One side bolt on the clamp and a set screw locks the saddle to the seat post and permits tilting of the saddle to any desired position.

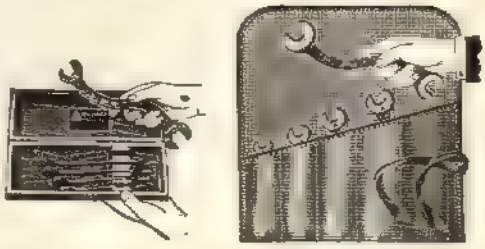
The "Pfanstiehl" Motor Cycle Coil

In addition to the Pfanstiehl automobile coils described in our August, 1907, issue, page 148, the Pfanstiehl Electrical Laboratory of North Chicago, Ill., is also manufacturing a motor cycle coil, which is constructed along the same lines as its automobile units, having the same remarkable efficiency and producing the "Caterpillar Flame."

The coil is compact and neat in appearance and its windings are so arranged and balanced that the coil responds very quickly, allowing for a short length of contact at the timer, thus insuring low current consumption and giving very accurate timing of the motor. The coil is put up in a polished hard fibre water-proof and non-breakable case. It is fitted with three or four terminals or flexible wire leads, or binding posts as desired. The size of the coil is 2¾ by 5½ inches, and the weight 2½ pounds.

B. & S. General Service Wrenches

The Billings & Spencer Co., of Hartford, Conn., are putting out their well known general service wrenches in sets of five, comprising ten sizes of openings. These wrenches are put up in convenient form in nicely finished wood boxes, which the



B. & S. General Service Wrenches.

shelf-hardwaremen will appreciate, and also in kit bags of drill or of canvas for the automobilist. These wrenches are made of high grade drop forged steel. They are made light and strong, and will also be found very useful for other purposes.

The Philadelphia branch of the Hartford Rubber Works Company has removed from 138 N. Tenth street, to 1425 Vine street.

The Hornecker Motor Mfg. Company, Whiting, Ind., will market in addition to its 2¼ horse-power Torpedo motorcycle, a 3 horse-power two-cylinder model for 1908.

HELMET OIL
HELMET OIL
START RIGHT BY USING HELMET OIL
CHAS. H. BESLY & CO.
15-17-19-21 So. CLINTON ST.
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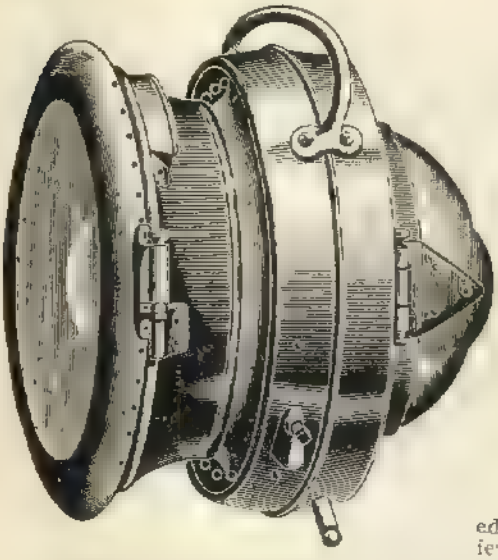

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This company has been so successful and were recently compelled to commence the enlargement of their plant. The addition will be of sand lime brick, mill construction with gravel roof. It will be the same dimensions as present building, 123 ft. by 50 ft. wide and 13 inch walls.

The new part will provide space for cleaning and shipping rooms, core room, pattern storage, carpenter room, etc., and the present building, 60 ft. by 123 ft., will be used as a foundry room entirely

Thirty five hands are now steadily employed and when the new building is done this number will be increased to 40 or 50 hands.

The officers of The New Process Steel Co are as follows: President, S. F. Dobbins Vice President, F. A. Stuart, Treasurer, F. S. Deuel; Secretary and Manager, S. C. French

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Few automobilists realize the importance of good oil.

They know in a general way that a car needs oil—and see that their car has "enough."

But good lubrication in an automobile isn't a matter of quantity—any more than it is in a watch.

After the man cleans your watch he oils it carefully with a special oil—that won't clog or gum or eat the metal—but will simply lubricate until the oil is evaporated.

Now you know that the watch will run for a long time after that—without attention—because the *oil is made for that purpose*—and we say to you "You can get the same results on your car if you'll go at it right—and here's how"—

Helmet oil is to an automobile what the finest watch oil is to a watch—Bearings packed with Helmet Oil need no attention except at long intervals—same as a watch—because—

The same applies. It is made with that end in view. It won't run out of the bearings because it won't melt under 175 F. It won't freeze. It doesn't contain an atom of pitch or gum or acid. It simply preserves a thin film of perfect oil between two frictional surfaces until it just naturally evaporates.

That is the most perfect form of lubrication known.

That is what Helmet Oil is doing daily on the finest cars in the world.

That is why it requires just half—50 per cent. less—Helmet Oil to run your car than any other brand.

This is no accident. It is the result of a scientific combination of high grade, refined ingredients *in exact proportions*. Helmet Oil will lubricate every bearing of your car.

But don't take our word for this. Simply take advantage of the following liberal offer.

You'll never have the limit of satisfaction with your car until you do.

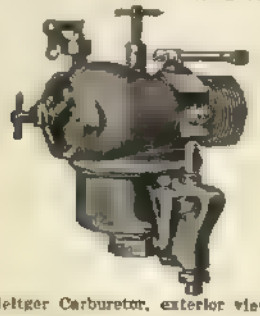
WE POSITIVELY GUARANTEE HELMET OIL

Send us your name and address and we will see that you get a sample cup of Helmet Oil. Try it 10 days. If it does not save you 50 per cent. over any soft oil you've ever tried return it to our nearest agent and no charge will be made for the oil used. Our book "Auto Lubrication" sent free. Address

C. H. Besly & Co., 13 S. Clinton St., Chicago, Ill.

The Heitger Carburetor

The Heitger carburetor, manufactured by the Heitger Carburetor Co., 205½-207½ West South street, Indianapolis, Ind., is adapted for automobile, marine and stationary use on either the four or two-cycle type of vapor engine. It contains a number of new and original features that make it especially adapted to automobile use. The mixing chambers are constructed so that it produces just the right mixture for each particular condition, speed, load, etc., such as the mixture for cranking to start motor, the low throttle speed, the full throttle, low speed, hard pull and the full throttle high speed. It is compact, neat and light and will readily go in most any place on the machine. All adjustments, draining, etc., are made from the top. The gasoline level is readily adjusted to suit different requirements. This is done by the screw (5). Screwing it to the right lowers the level; to the left raises it. The float always lays in a horizontal position when float valve (7) is closed, whether the float is adjusted high or low. The tension on float valve spring (8) can be adjusted to suit a strong liquid pressure, as where the tank is high in a boat. The float chamber can be encircled around to any position to allow for attaching liquid feed pipe from any direction. It can be drained by merely loosening screw (29) from top. It requires no flushing. The starting plunger (22) is made to be pushed down by lever (20), so as to hold air valve (16) closed in cranking, allowing all air to pass thru suction tube (10), making a rich mixture for starting without spilling gasoline. There is a fine gauze strainer (28) around the base of the suction tube (10) to prevent dirt entering spray nozzle. Throttle can be set to open or close by either a push or pull motion, and throttle lever can be operated from either side or any point between. The makers are ready to send these carburetors to manufacturers or other responsible parties on approval and trial, and can make immediate deliveries on the ¾, 1 and 1¼ inch, either horizontal or verticle connection and on the 1½ and 2 inch in about 30 days.



Heitger Carburetor, exterior view.

Heitger Carburetor sectional view. 1, Main Mixing Chamber; 2, Float Chamber; 3, Float (cork); 4, Float Plates (2); 5, Float Adjusting Screw; 6, Float Lever; 7, Float Valve; 8, Float Valve Spring; 9, Float Valve Guide; 10, Suction Tube (main air inlet); 11, Spray Nozzle; 12, Gasoline Adjusting Stem; 13, Gasoline Adjusting Stem Lock Nut; 14, Gasoline Adjusting Stem Cone; 15, Air Valve Cage (auxilliary air inlet); 16, Air Valve (leather); 17, Air Valve Spring, 18, Air Valve Adjusting Stem; 19, Air Valve Adjusting Stem Lock Nut; 20, Starting Plunger Lever; 21, Starting Plunger Lever Bracket, 22, Starting Plunger; 23, Throttle Disc, 24, Throttle Disc Screw; 25, Throttle Stem 26 Throttle Lever; 27, Throttle Lever Clamp Screw 28 Gauze Strainer 29 Drain Screw 30 Float Valve Guide Cap (not shown) 31 Throttle Stop Screw (not shown) 32 Air Valve Cage Screws 2 (not shown) 33 Gasoline Connection 34, Gasoline Connection Nut

Trade Printed Matter

The "Pittsburg" Automatic Vise & Tool Co., General Offices, Pittsburg, Pa., have just had published and sent out to the trade, a very handsome and unique book advertising the Pittsburg Two Way Vises, and dealing particularly with their "High Speed" Bench Vise. The cover design is a vivid mill scene with the Pittsburg vise prominent in the foreground, surrounded by a wreath of vises.

Morgan & Wright, Detroit, Mich. very patriotically celebrated the Fourth of July by issuing, in the name of 99 3-10 of the users of M & W tires, a declaration of independence printed in red and blue on white paper and bordered in red, white and blue. A little American flag was placed across the corner of each copy. The "declaration" was, very naturally, in the form of a boost for M & W tires.

The fourth of their series of route books has just been issued by the White Co., of Cleveland Ohio, and contains full particulars regarding the "air line" route to the Jamestown Exposition.

The Logan Construction Co., Chillicothe, Ohio, have issued a neat folder to disseminate the story of the run of a Logan "Blue Streak" runabout from the "Lake to River," that is, from Toledo to Portsmouth. The distance covered was 254 miles and, as the folder tells the story, it was accomplished "twixt dawn and dark."

New York Motor Fabric Co., Room 418, No. 32 Union Square, N. Y. have issued their first catalog of fabric specialties for the automobile trade, and it is a very commendable publication, containing 12 good-sized pages and a very neat cover. Their line of lamp covers, tire cases, etc., is very favorably presented and nicely illustrated.

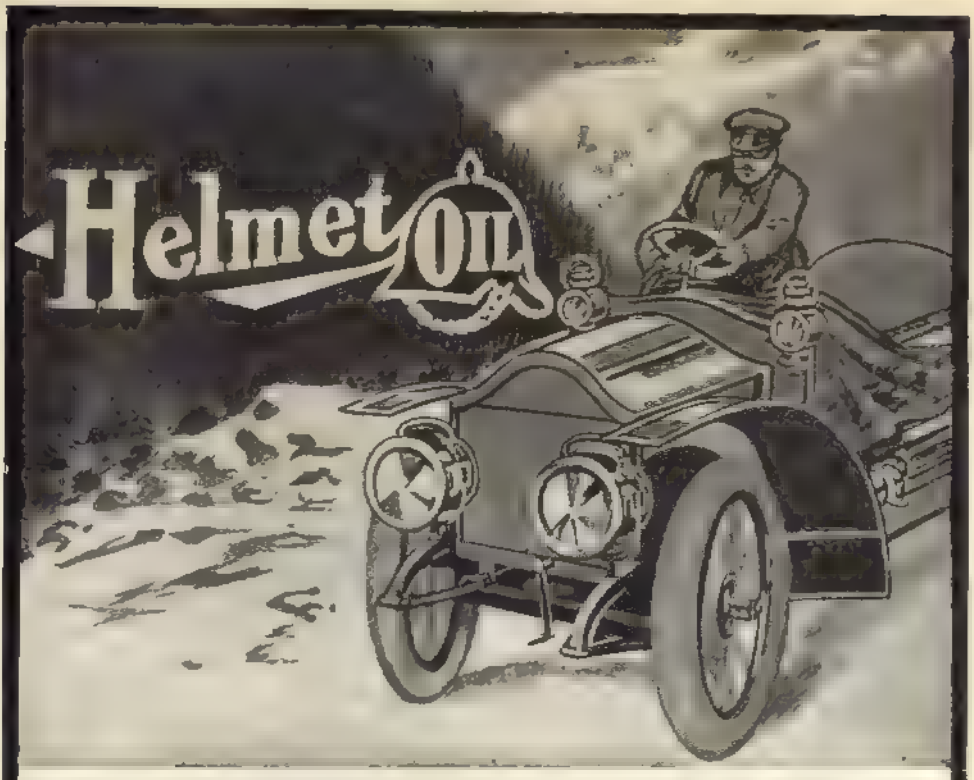
Rough Rider seat springs are both artistically and practically advertised in a fine-looking booklet called "Automobile Comfort," and issued by Ventilated Cushion & Spring Co., Fisher Bldg., Chicago.

The Locomobile Company of America, whose factory is located at Bridgeport, Conn., have issued thru their publicity department, which is in charge of J. A. Kingman, an inspection book for 1907 Locomobile Touring Cars. It is one of the most complete and useful pieces of printed matter ever issued by an automobile manufacturer, as it takes up the various difficulties or problems which confront the automobile operator and deals with them individually, intelligently and concisely.

It is a book 4½x7 inches in size and contains about ninety pages of text and illustrations. It has a table of contents with classifications, so that as a reference book it is very accessible.

These instruction books are sent to owners of Locomobiles in such form as will command attention and demand preservation. They are enclosed in a leather wallet which has a pocket on the opposite side, which can be used for maps and other data useful to the automobilist. If more manufacturers would consider the practical side of the automobile and endeavor to fully enlighten their patrons it would be of great benefit, for such instruction books as the one referred to cannot help but appeal in all aspects to the experienced automobilist as well as the novice.

"Bantam Anti Friction Booster" is the title of a "yellow journal" issued lately by The Bantam Anti-Friction Co., of Bantam, Conn., and it represents, we are told, the combined efforts of everybody in the establishment from Mr. Rogers down. The "booster" is a 4-page sheet, 5 columns wide, and contains an immense amount of matter—jokes, local news, information about Bantam Bearings, etc., also some local advertising.



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If you use common liquid oil, the bearings require constant watching. If the day is hot, liquid oil becomes thin, flows too readily, the bearings are flooded and the supply is exhausted. On the other hand, if the day is cold, the liquid oil congeals, flows slowly and is very slow acting. Helmet Oil is not affected by heat or cold. It is not a liquid oil. On account of its "body" or density, the temperature of any day does not affect it. Helmet Oil does not contain an atom of pitch, gum or acid. It will give you perfect satisfaction on every bearing in your automobile.

The merits of Helmet Oil can be thoroughly demonstrated on *your* car *free* of expense to you.

Try It Free—Write for Booklet

Send us the name of your dealer and we will have him give you a free sample to try. Put it on the bearing that is giving you the most trouble and you will find that it will give perfect satisfaction.

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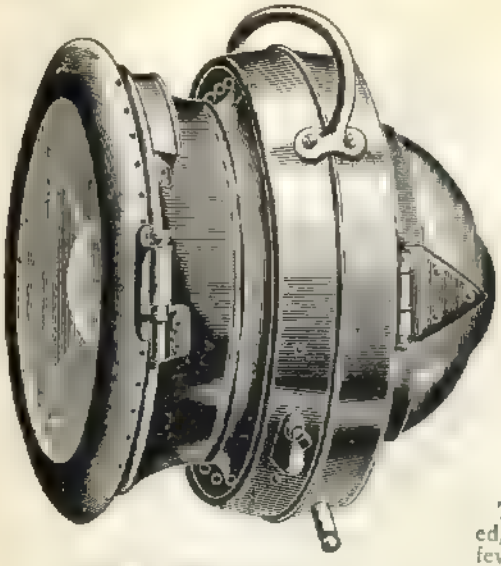

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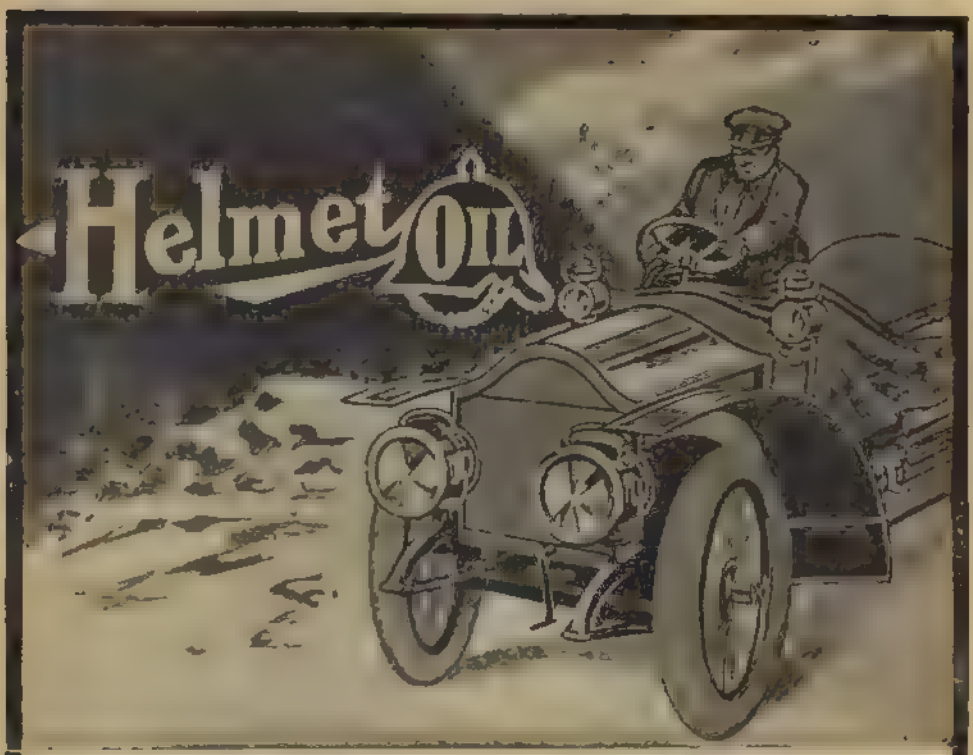

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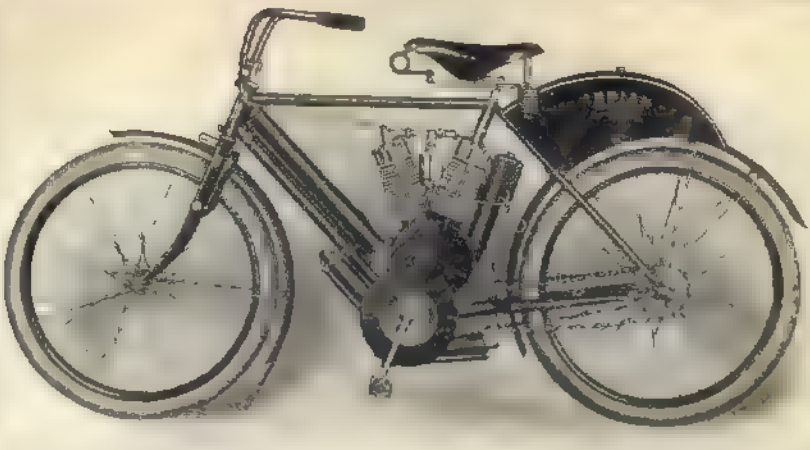
"Auto Lubrication" is a booklet that we send *free*. It contains facts about lubrication that every automobile owner should know.

C. H. BESLY & CO., 13 S. Clinton St., Chicago, Ill.



Twin Cylinder Indian

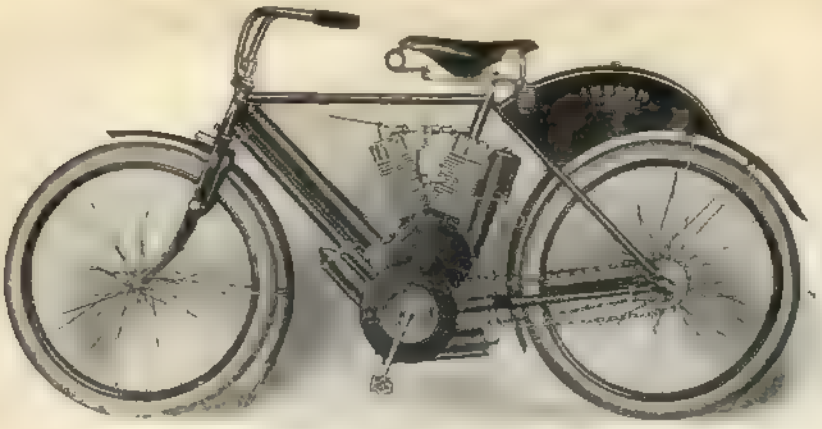
This new model is to the motorcycle trade what the large six cylinder car is to the automobile industry. It represents the achievement of years of experiment and experience, and gives to the fastidious buyer an abundance of power, so that it is possible to attain the maximum speed under all conditions of road. The reputation of our single cylinder model is world renowned, which is a guarantee that our Twin Cylinder Motorcycle is without a rival. If you would know more about this interesting proposition, write for the 1907 Indian catalog, which is just out. It comprehensively illustrates and describes the details of construction of the Single and Twin Cylinder Motorcycles, and recounts the remarkable improvements that have been made in the past several years. It is worth reading, as it is both interesting and instructing.

HENDEE MFG. CO.

837 State Street, Springfield, Mass.

NEW YORK DISTRIBUTORS:

F. A. Baker & Co., 37 Warren St., N. Y. City



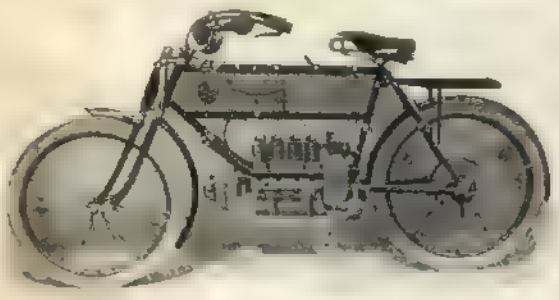
The "Indian" Twin Cylinder Motorcycle

The "Indian" Twin-Cylinder Motor Cycle

The Hendee Manufacturing Co., Springfield, Mass., are now making their Indian motor cycle with twin cylinders. Their single cylinder 1907 machine was described in our February, 1907, issue, page 404. The twin cylinder model in practically all save the motor is a reproduction of the single-cylinder Indian. The twin cylinders are made of the same metals and are the same dimensions as the other, but their doubling, of course, increases the capacity of the engine to 4 H. P., and while with the new carburetor it permits of a walking pace, it is capable of a speed of 60 miles per hour. The wheel base of the twin-cylinder is 5 inches, and its weight 125 pounds. The price is $275

1907 F. N. 4-Cylinder Motor Cycle

Marketed by Ovington Motor Co., 2208 Broadway New York City



1907 F. N. 4-CYLINDER MOTOR CYCLE

Four cylinder automobile type motor, 2 inches stroke, 2½ inches bore, 4 H. P. Schebler carburetor; gasoline tank to; flexible engine suspension; spiral gear and shaft drive; front fork fitted with shock absorber; F. N. float feed carburetor; wheel base 56 inches; gasoline capacity 2 gallons; weight 150 pounds; speed 40 miles per hour; ignition by high tension magneto; double acting piston pump; expanding rear brake; internal expanding rear rim, expanding drum brake; automatic type, operated by back pedaling; combined stand and luggage carrier fitted; lamp bracket built on the top tube; tires 26x2½ inches, with non-skid outer shoes; weight 150 lbs.; price $350.00.

The above specifications and illustration were inadvertently omitted from the Motor Cycle Review in the March number of The Journal.

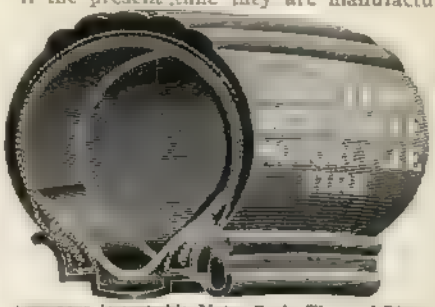
The G & J Tire Company, in addition to their motorcycle tire with the familiar corrugated tread, are making it with the so-called Bailey studded tread.

E. J. Willis, of New York City, has again taken up motorcycles, having secured the agency for the Merkel.

'Goodyear" Detachable Motor Cycle Tire and Rim

Goodyear Tire and Rubber Co., Akron, Ohio, have produced for the 1907 season a motor cycle tire and rim, which is detachable and which they claim can be applied or removed in less than twenty seconds. The tires are fastened so that they will not cut or chafe the rim even tho ridden deflated. The tubes are entirely prevented from pinching, and the tires cannot be buckled. The accompanying cut shows the manner in which the tire and rim are held in place.

At the present time they are manufacturing these tires in three grades: Regular Roadster, Non-Skid Roadster and the Non-Skid Heavy type tire. The non-Skid tires have a tread similar to the Bailey; this tread being an integral part of the tire and not applied after the tire is made.



"Goodyear" Detachable Motor Cycle Tire and Rim

When placing a tire on the rim it is simply slid on, until one edge of the head is under the flange on the far side. A removable flange is then put on, and then a split steel locking ring is snapt into place, which holds the tire firmly in postion. The tire is then ready for inflation.

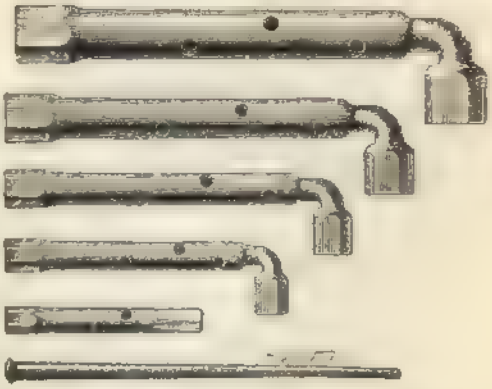
A FEW OF OUR SPECIALTIES

The "Hill" Valve Spring Lifter

This Tool is designed to facilitate the Removal and Replacement of Valve Springs, and is fitted with three fulcrum screws of various lengths, so as to suit all makes of engines.

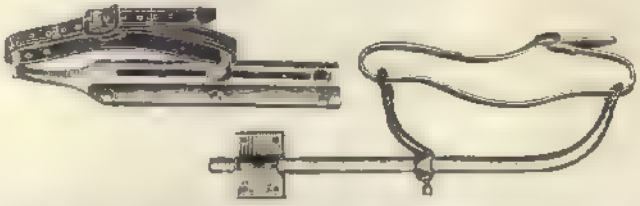
Invaluable to repairmen desiring to grind in the valves on motors. Price, including three screws, $1.50

Offset Bent Socket Wrenches



Set C—Consists of four pieces and lever handle. Will fit five standard sizes of hexagon nuts. Price, $5.40. Set D—Consists of five pieces and lever handle. Price, $6.40.

Simplex Adjustable Tire Holders



Consists of a set of three pieces—two side pieces for attaching to the body of the car, and one bottom bracket to be attached to running board. Can be adjusted to hold from one to three tires. The length can also be adjusted from three to twelve inches at reverse end of bracket. All parts are made of extra heavy, nickel-plated steel with a highly polished brass finish and equipped with strong straps for holding tires. Price, complete set, $8.00.

Guaranteed Accurate Time Pieces especially designed for use on **Automobiles** and **Motor Boats.**

Made of Solid Brass, highly polished and can be wound, set and regulated without removing from the case. Price, with Porcelain Dial Silver Dial, $8.00.

Krausz Auto Record

A practicable and convenient Expense and Record Book invaluable to every auto owner. Size 4½ x 6¾ in.

Price, with Flexible Leather Cover, $1.00
" " Special Cloth Cover, 50c.

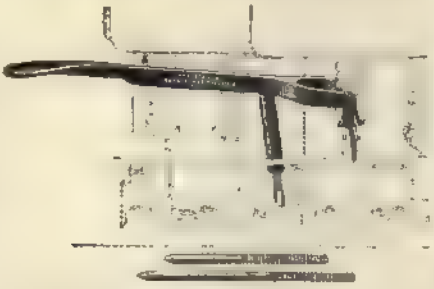
THE MOTOR CAR EQUIPMENT COMPANY

Manufacturers, Importers and Distributors of AUTOMOBILE ACCESSORIES Main Office and Warerooms 55 WARREN STREET, NEW YORK

Our complete 128 page catalogue will be mailed free, upon request.

A FEW OF OUR SPECIALTIES

The "Hill" Valve Spring Lifter



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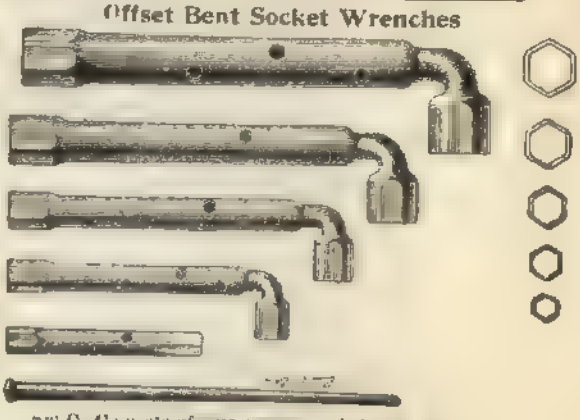
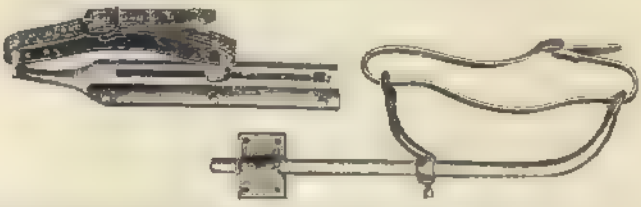


Set C Consists of four pieces and lever handle. With [illegible] sizes of hexagon nuts. Price, $3.0[illegible] Sets of five pieces and lever handle. Price, $6.00

Simplex Adjustable Tire Holders



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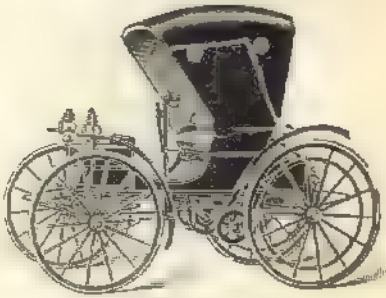
Holsman

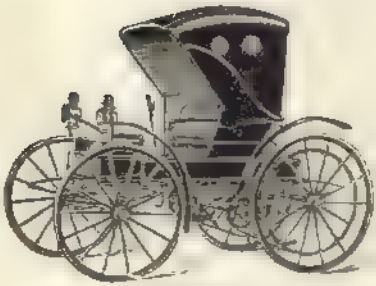
Five Years of Success

MODEL No. 8

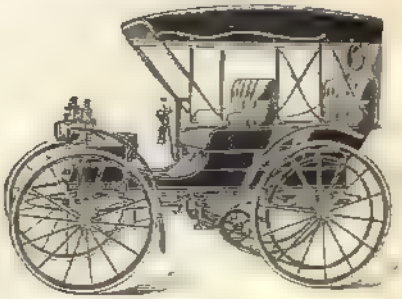


MODEL No. 10

Perfect Score in Chicago Reliability Run



MODEL No. 9



MODEL No. 11

BUILT LIKE A CARRIAGE

Wheels 44 and 48 inches diameter. Solid rubber tires air cooled. No differential gear; no friction clutches; no water tanks; no foot levers Reverses without extra gears. Cleares the center of the road by 18 inches, and therefore has twice the advantage of the ordinary machines in muddy, rutty, rough or rocky roads. The Pioneer of the carriage or buggy type of automobiles and the only one that has been on the market more than one year. The Holsman has been manufactured regularly for five years and is fully tested and warranted.

THE HOLSMAN AUTOMOBILE CO.

Room 602, Monadnock Block - CHICAGO, ILL., U. S. A.

$2,000

IS THE

DRAGON

PRICE

(*f.* o. b. Philadelphia)

WHY?

Those not familiar with the ways and by-ways of the automobile business often ask why the price of the Dragon is only $2,000, when other cars of its class are priced at $2,500 to $3,000.

The answer is, because Dragon buyers are charged only for *the car that they get.* They do not pay for past failures and unsuccessful experiments.

The price of the Dragon is based on actual worth alone, because we believe that, whether the automobile is a luxury or a necessity, the man who buys one is entitled to a dollar's value for every dollar he invests—and not to be "squeezed" for a fancy price on the supposition that "he can afford it." The Dragon is an honest car at an honest price.

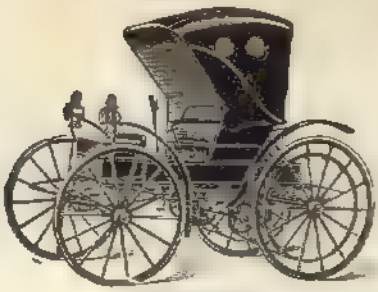
THE DRAGON AUTOMOBILE COMPANY

Member A. M. C. M. A.

30th, 31st and Chestnut Streets, Philadelphia

1377 Broadway, New York
524 Golden Gate Ave., San Francisco
1437 Michigan Ave., Chicago
11 Burnside Place, Montreal
117 Massachusetts Ave., Boston
16 Temperance Street, Toronto

MODEL No. 8



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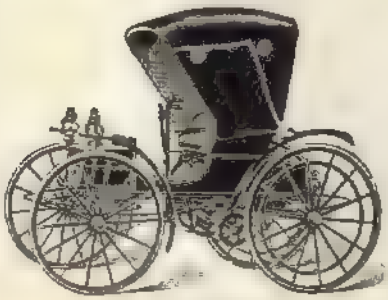

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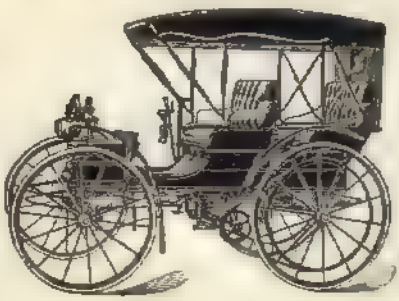


MODEL No. 11

HOLSMAN RECORDS

The Car With a REPUTATION

Five Years of Success

The records of the participation of the **Holsman Automobile** in public contests date back to 1902, when it won a blue ribbon in the Chicago 100 mile Reliability Run of that year.

Some of the more recent records are:

Chicago 100 mile Reliability Run, July 26, '06:

Perfect Score in runabout class and first place in touring cars in our class.

Algonquin Hill Climbing Contest, September 6, '06:

Making better time than machines of nearly double the price.

Algonquin Hill Climbing Contest, August 9, '07:

Fastest time in its class.

Chicago 150 mile Reliability non-motor-stop Run, June 28, 07:

Perfect score.

Chicago 95 mile Fuel Economy contest, September 13, '07:

Smallest gasoline consumption, with one exception; 29 miles per gallon.

The Holsman Automobile Company

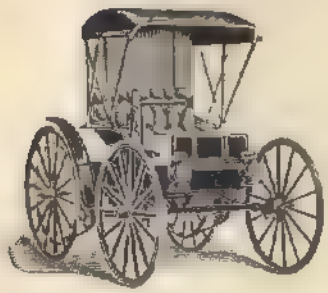
The oldest and largest manufacturers of high-wheeled automobiles

ROOM 411 MONADNOCK BLOCK, - CHICAGO, ILL.

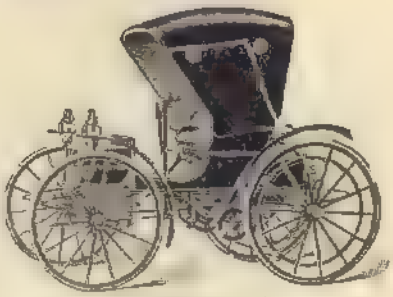
See us at the New York Show in the Grand Central Palace, October 24 to 31, 1907

Holsman

Five Years of Success



MODEL No. 3



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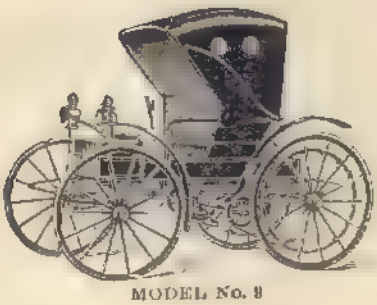

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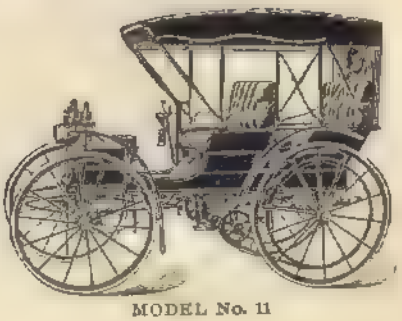

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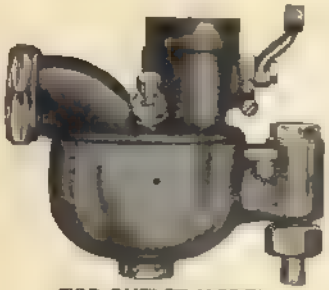
THE HOLSMAN AUTOMOBILE CO.

Room 602, Monadnock Block - CHICAGO, ILL., U. S. A.

THE CARBURETOR PROBLEM SOLVED!

How to make an Automatic Carburetor without Springs, Air Valves or other moving parts.



TOP OUTLET MODEL
Side Outlet also furnished

For answer see the

1908 Holley

(Patents applied for)

In this carburetor we have achieved automatic action solely by the shape of the mixing chamber and the arrangement of the spray orifice, and the operation is so perfect that the motor can be throttled to speeds so low that you would have thought them impossible. There is only one adjustment—that of the needle controlling the spray orifice. The veriest novice can adjust it as well as the expert, and once set it cannot go wrong. Its efficency is as remarkable as its simplicity.

Write for particulars.

The new 1908 Model "W" Holley Carburetor for the Ford Runabout:

OUR CLAIMS

It will permit throttling the motor down to a pace equal to a slow walk, and when running idle will do so without objectionable noise.

It will consume less fuel than carburetor on car at present or any carburetor on the market.

It will not change adjustment after once set.

It will give the maximum horsepower of the motor.

It will not choke up or cause irregular running or flooding.

OUR GUARANTEE

Your money back if you want it.

OUR PRICE

$12.00 ready to attach.

HOLLEY BROTHERS COMPANY

DETROIT, MICHIGAN

THE MERKEL

THE 1908 MERKEL

New Ball Bearing Motor, 3¼x3¼ developing more than three horse power. Friction is reduced to a minimum—combining speed, power and economy of fuel.

New Double Grip Control, simple, strong, durable and invisible. Magneto iguition as an option.

The exclusive spring frame built lower for 1908, makes the **Merkel** the most comfortable Motor Cycle in the world. All roads are smooth on a Merkel and every ride is a pleasure ride.

Built entirely in our own factory, each and every part guaranteed to be perfect.

It is the finest Motor Cycle ever offered to the Public. The Selling Sensation of 1908.

Write for catalog. Live agents in all unoccupied territory.

Exhibits at Chicago Show, Space Nos. 132-133, November 30th to December 7th.

MERKEL MOTOR CO.

1098 26th Avenue, Milwaukee, Wisconsin

Pacific Coast Representatives
Ollier & Worthington, 1039 South Main St., Los Angeles, California

RECORDS

5 YEARS OF SUCCESS

The records of the Holsman Automobile in public contests date back to 1902, when it won a blue ribbon in the

Chicago 100-Mile Reliability Run of That Year

Some of the more recent records are

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Perfect Score

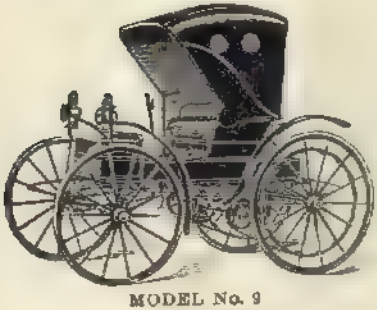
Chicago 95-Mile Fuel Economy Contest, Sept. 13, 1907
Smallest Gasoline Consumption, with One Exception.
29 Miles Per Gallon

MODEL No. 10 MODEL NO 11

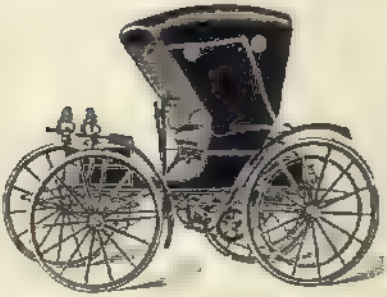
Holsman Automobile Company
Suite 424 Monadnock Block, Chicago, Ill.

A REPUTATION

MODEL No. 3



MODEL No. 9



MODEL No. 10

MODEL No. 11

ANOTHER PERFECT SCORE

In the Chicago Reliability Run June 28, 1907

It takes time to perfect an automobile just the same as it does any other piece of machinery. The **HOLSMAN** has now been on the market

5 YEARS

and has established a reputation for stability and reliability. Do not be induced to help some new inventor work out his experiments on you by buying a machine that has not been on the market more than a year. If you are a user you will regret it, and if you are an agent you will regret it still more.

Holsman Automobile Company

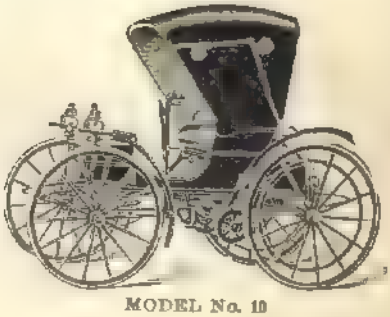
Room 602 Monadnock Block, Chicago

THE OLDEST AND LARGEST MANUFACTURERS OF CARRIAGE AUTOMOBILES

Holsman

Fifth Year of Success

MODEL No. 8



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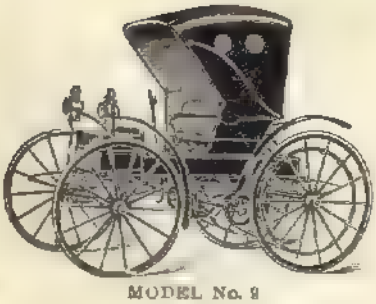

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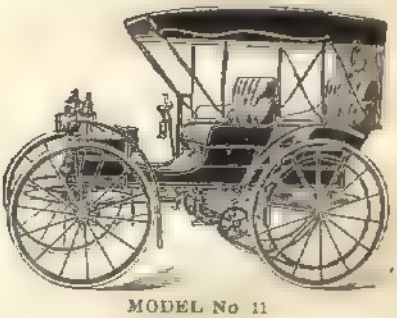


MODEL No 11

First Place in Light Touring Class

THE HOLSMAN AUTOMOBILE CO.

Room 602, Monadnock Block, CHICAGO, ILL.

MORE PROOF OF
SINGLE CYLINDER CADILLAC
ECONOMY AND EFFICIENCY

This week we have just a dozen Single Cylinder Cadillac enthusiasts who have made affidavits as to their expenses and told their experiences.

The mileage runs from 850 up to over 30,000, the latter by Dr. James Sawyer, of Asheville, N. C. The total of the twelve cars was 104,950 miles or an average of 8746 per car.

The total lengths of ownerships has been 276 months or an average of 23 months per car.

The repairs averaged $55.24 on the cars for the whole time they have been run. Maybe you think this looks heavy. Well, it is—for a Cadillac average. But, three of the owners in this lot included tire expense also. Of course that counts up some, especially when one man drove his Cadillac 30,000 miles—more than the distance around the earth and the other two each drove their cars 10,000 miles or more. However, taking the whole twelve into consideration, the average monthly repair expense, including tires in the three cases mentioned, average only $2 40 per month. Or, on the basis of miles traveled it figures .0063: in other words,

LESS THAN TWO-THIRDS OF A CENT A MILE

for repairs.

Here are the figures which the twelve owners report as the number of miles they got per gallon of gasoline, 14, 15, 16, 17, 18, 18, 20, 20, 20, 20, 20, 22, 22, or an average of

18 1-3 MILES PER GALLON

Figuring gasoline as costing 18 cents per gal. it makes the cost of maintenance and operating a little less than one and two-third cents per mile, or on the basis of four passengers carried would be an average of five-twelfths of a cent per mile for each passenger. And it's cheap traveling at that.

It would take all the space of the reading columns of this journal to reprint all the good things the owners say about their Cadillacs. Mr. W. J. Smith, a newspaper publisher of Waukegan, Ill., who has driven his car 10,000 miles tells some very interesting experiences and concludes in these words:—

"In summing up some of the points in favor of the CADILLAC, I would mention these as being conspicuous:

1—Because it always goes, is always ready for action.

2—Because the original cost is low; the lowest of any really good machine on the market.

3—Because it costs so little to operate, so far as fuel and lubrication goes.

4 Because it is made up of material, which, part for part, seems to be able to outwear most machines.

5—Because it is constructed in such a manner that broken parts can be replaced rapidly, with ease and small expense, as a result of the manufacturers' plan of making each part alike with this particular end in view.

6 Because it is so simple in mechanical arrangement that a novice, one who knows absolutely nothing about machinery, can operate it successfully within a surprisingly short time."

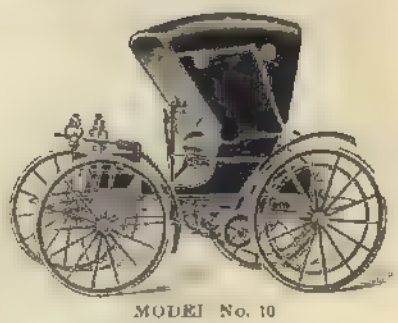
CADILLAC MOTOR CAR CO., - Detroit, Mich.

Members of Association Licensed Automobile Manufacturers.

Holsman

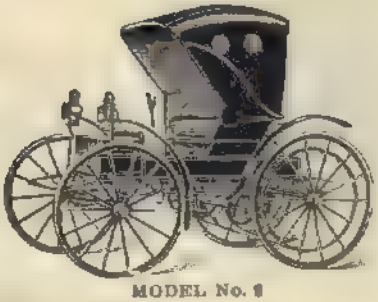
Five Years of Success

MODEL No. 8

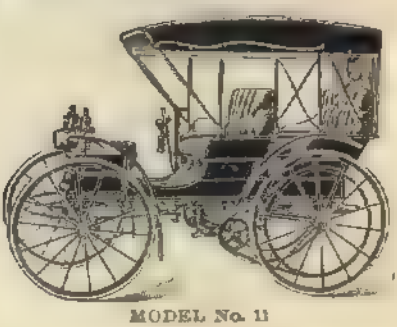


MODEL No. 10

Perfect Score in Chicago Reliability Run



MODEL No. 9



MODEL No. 11

BUILT LIKE A CARRIAGE

Wheels 44 and 48 inches diameter. Solid rubber tires - air cooled. No differential gear; no friction clutches; no water tanks; no foot levers. Reverses without extra gears. Cleares the center of the road by 18 inches, and therefore has twice the advantage of the ordinary machines in muddy, rutty, rough or rocky roads. The Pioneer of the carriage or buggy type of automobiles and the only one that has been on the market more than one year. The Holsman has been manufactured regularly for five years and is fully tested and warranted.

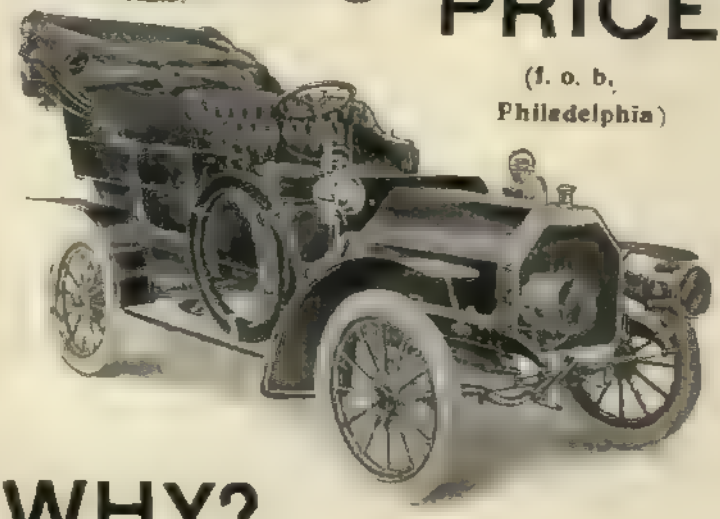
THE HOLSMAN AUTOMOBILE CO.

Room 602, Monadnock Block - CHICAGO, ILL., U. S. A.

$2,000

IS THE DRAGON PRICE

(f. o. b. Philadelphia)



WHY?

Those not familiar with the ways and by-ways of the automobile business often ask why the price of the Dragon is only $2,000, when other cars of its class are priced at $2,500 to $3,000.

The answer is, because Dragon buyers are charged only for *the car that they get.* They do not pay for past failures and unsuccessful experiments

The price of the Dragon is based on actual worth alone, because we believe that, whether the automobile is a luxury or a necessity, the man who buys one is entitled to a dollar's value for every dollar he invests—and not to be "squeezed" for a fancy price on the supposition that "he can afford it." The Dragon is an honest car at an honest price.

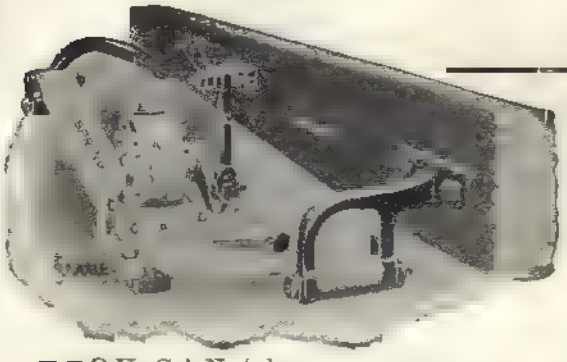
THE DRAGON AUTOMOBILE COMPANY

Member A. M. C. M. A.

30th, 31st and Chestnut Streets, Philadelphia

1667 Broadway, New York
524 Golden Gate Ave., San Francisco
1337 Michigan Ave., Chicago
161 Burnside Place, Montreal
12[illegible] Massachusetts Ave., Boston
1 Temperance Street, Toronto

Ride Easier, Safer And Faster With a Hotchkin Anti-Jolt Device



YOU CAN take your car at full speed safely over the hardest bumps and never feel the throw. There isn't any. The **Hotchkin Anti-Jolt Device** eliminates it—cuts it out. This device isn't a "shock absorber" or set of supplementary springs that make your car ride heavy on smooth roads. It's a shock eliminator that does away with all "come backs." You can use the lightest springs the manufacturer will put on the car without fear of breaking them, and you will ride easier, safer and faster over rough roads as well as on smooth ones.

The **Hotchkin Anti-Jolt Device** eliminates many of the ignition and poor gasoline feed troubles that resulted from hard riding. Every time your car gets a jolt, you rack the engine, jolt the battery contacts and strain your transmission gear.

This **Anti-Jolt Device** will save wear and tear on every part of your equipment, lessen the cost of maintenance, give better traction, allow greater speed, save tires and will carry your car as easily over bumps and "thank-you-ma'ms" at full speed as on an asphalt pavement.

Write for descriptive matter, or send to-day for the **Hotchkin Anti-Jolt Device** and try it 30 days at our risk.

THE HOTCHKIN MFG. CO., 1265 Michigan Boulevard, Chicago

The Indian to the Front as Usual

At the Chicago Show Nov. 30 to Dec. 7 will be found on Exhibition 1908 INDIANS consisting of

2¾ H. P., Single Cylinder - Price $200.00
3½ H. P., Single Cylinder - Price $225.00
5 H. P., Twin Cylinder - Price $250.00

All Equipped with Mechanically Operated Inlet Valves

New Features

Mechanically operated inlet valves
Increased horse power
Improved G & J Tires
Standard No. 3 Motocycle Pedals
More spring to Cushion Fork
Gasoline shut off, operating with needle valve

Options

Gear or Chain Drive
Battery Case to take Standard Dry cells
Magneto Ignition $[illegible]
Brooks B[illegible]
Blue, Black or Fuhan red

The 5 H. P. Twin Indian is the masterpiece of Oscar Hedstrom, two powerful cylinders, exerting constant tension on the driving mechanism, using only minimum power for regular road work, and reserving tremendous power for bursts of speed and triumphant hill climbing.

Advance circulars giving full description and illustrations of 1908 INDIANS mailed on request

---

Made by

Hendee Manufacturing Company

Springfield, Mass.

Peugeot 1908 Two-Cylinder Motorcycle

The National Sales Corporation, of 206 Broadway, New York City, is now acting as United States representative for the Peugeot Motorcycles, which are foreign made. The latest 2-cylinder model is here illustrated, one of the features of which is a very efficient form of spring fork in which is incorporated a shock absorber. The main forks are bent backward just below the crown, to conform to the contour of the mud guard extending in the form of an arc about 1-6 of the wheel circumference, at which point they are joined to horizontal swinging links carrying the axle, and to a pair of longer arms which are curved backwards slightly, and joined to the lower ends of a pair of dummy forks. The head of these dummy forks slides in the steering head of the machine and is controlled by a concealed spring. There is a small cylinder mounted parallel with the head on a single bracket fixt to the crown, this cylinder carrying a telescoping sleeve, which is linked to the dummy forks by means of short arms. Thus the rebounding action of the main spring is checked by the resistance offered to the motion of the telescoping cylinder over its plunger.

A very substantial braking equipment is fitted to this machine, including two independent brakes, of the single shoe type, acting upon the inside of the rear belt pulley, one on the top and one on the front. Both these brakes are operated by means of Bowden wires, actuated by grip levers, one of which is provided at each end of the handle bar. The carburetor used is the Longuemare, and three control levers are used, one for the gas and air regulation, and one for the timer, the valve lifter being controlled by a small finger lever, mounted on the right handle bar. The carburetor is mounted between two cylinders as shown in the cut, the gas being furnished to each cylinder thru branches of the intake pipe of equal length. Magneto ignition may be furnished with this machine, and when furnished the magneto is placed in the front of the crank case below the front cylinder on a bracket bolted to the base of the engine. In all of the Peugeot machines a trap is provided in the gasoline line to rid the fuel of impurities before it reaches the carburetor.

The 1908 Peugeot 2-cylinder Motor Cycle

Miami Company Now Making the Musselman Coaster Brake

The Musselman Coaster Brake, which was described in our May, 1907, issue, page 316, is now made by the Miami Cycle & Manufacturing Co., of Middletown, O., the well known makers of racycles. This brake is a departure from the usual coaster brake constructions, and is very compact, resembling in appearance very closely the old style rear barrel hub. It performs its operations without the use of springs, levers, braces, or side arms, and is said to be very sensitive in action, not only giving a secure braking effect, but instantly providing a free coaster effect. It is the intention of the Miami Company to market the brake thru jobbers. No material changes have been made in this brake since we described it, the Miami Company merely defining it in detail. Repeated tests have proved it to be all they anticipated, and they are looking for an extended sale on this device.

Four More Scalps for the Indian

In the F. A. M. New York-Providence Endurance, Hill-Climbing and Economy Test, July 30-31

Indian Motocycles

Finished 1, 2, 3, 4, 5

Also first in all National Championships, fastest time in Hill-Climb and 20-Mile Road Race.

This should convince you of the superiority of the **INDIAN,** for it is

First in { **RELIABILITY** / **HILL-CLIMBING** / **ECONOMY** / **SPEED** } **The 4 Essentials**

Catalogue on Request

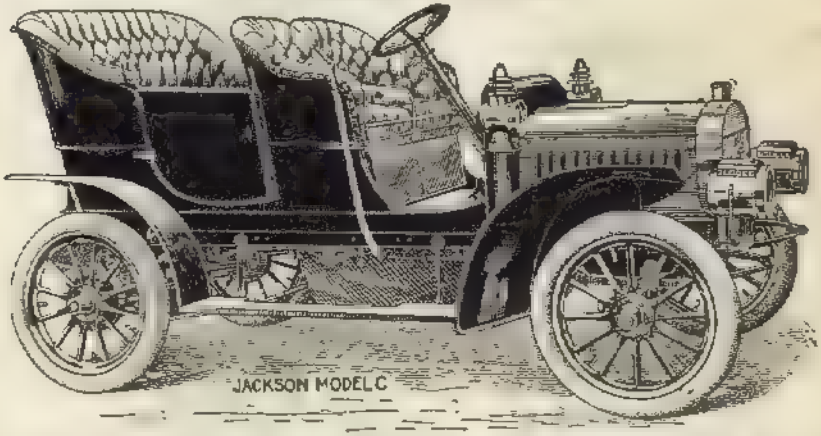
HENDEE MFG. CO.

Springfield, Mass.

An Exciting Race and a Close Finish.

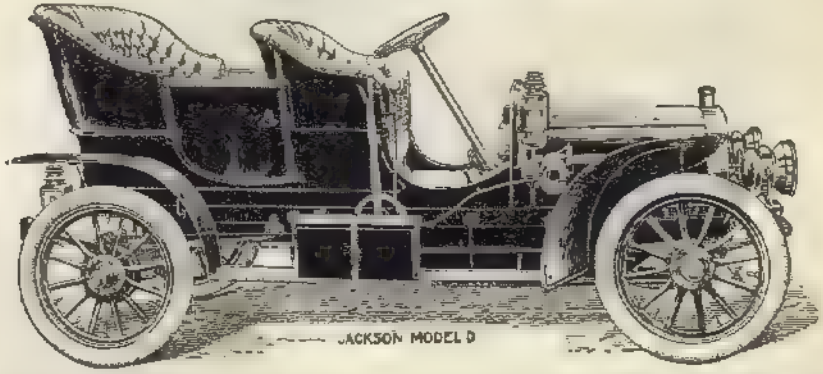
It is a remarkable co-incidence that after many months of hot competition, with honors alternating, on the first day of August, 1907, exactly the same number of Model C and Model D Jackson Cars respectively, had been sold and delivered, and the race was still on, with the unfilled orders slightly favoring the Model D. We are pleased to present pictures of the contestants.

The Model C Jackson



Price $1250. Two cylinders, horizontally opposed, under the body. Chain drive, with a strong and noiseless chain. Horsepower, 24. Wheels, 30x3½. Five passenger body with detachable tonneau. Complete equipment.

The Model D Jackson



Price $1500. Two cylinders, horizontally opposed, under the hood, giving much of the effect, in looks of a four cylinder car. Horse Power, 24. Bevel gear drive. Wheels, 32x3½. Ample seating capacity for five persons. Complete equipment of horn, lamps, etc.

"No Sand Too Deep—No Hill Too Steep."

JACKSON AUTOMOBILE CO., Jackson, Mich.

Jackson

"No Sand Too Deep—No Hill Too Steep"

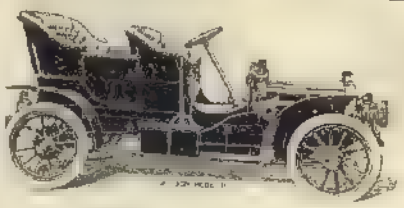
MODEL C, 20-24 H. P. $1250

No other car on the market gives so much genuine value for $1250.

2 cylinder opposed water-cooled motor, 5¼-inch bore by 5-inch stroke. Jump spark ignition Jackson Planetary Transmission, two speeds forward and reverse. Multiple disc clutch. Pressed steel frame. Equipment,—two gas lamps, two side oil lamps, tail lamp, horn, full set of tools, tire repairing outfit and pump.

MODEL D, 20-24 H. P. $1500

Motor of the same type and horsepower as Model C. Ignition,—jump spark and storage battery, coil on dash. Lubrication by Hill Precision Oiler. Planetary Transmission. External and internal hub brakes. Axles and differentials of the well-known Weston-Mott and Brown-Lipe manufacture. Pressed steel frame. Equipment in the matter of horns, lamps, etc., is handsome, substantial and generous.

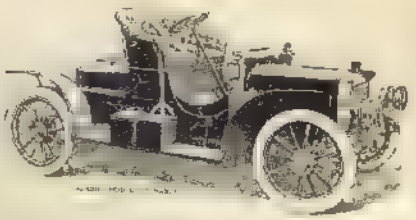


MODEL G, 40-45 H. P. $2500

4 cylinder, 4 cycle, vertical motor, placed under the hood. Sliding gear transmission, three speeds forward and reverse. Bevel gear drive. Ignition, same as Model D. Complete equipment of tools, dragon horn, elegant gas lamps, generator, etc. A substantial, roomy, splendidly upholstered and finished car, that can be depended upon at all times.

MODEL D RUNABOUT, 20-24 H. P. $1500

General specifications same as Model D Touring Car. Bevel gear drive, pressed steel frame, external and internal hub brakes. 2 cylinder opposed motor, under hood.



JACKSON AUTOMOBILE CO.

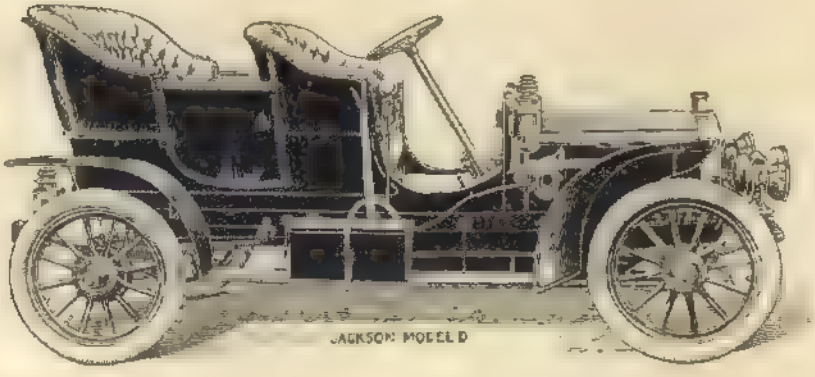
JACKSON, MICH., U. S. A.

THE VALUE IS THERE!

Ask anyone who knows and who is not prejudiced by trade jealousy

The popularity of this car has grown by leaps and bounds

"No sand too deep"
"No hill too steep"



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JACKSON AUTOMOBILE CO.
JACKSON, MICH.

MATHESON
The Standard American Car.

SOME big beautiful foreign cars sell for $10,000 to $14,000. Are they worth it? Certainly they are. So is the Matheson; it is just as big; just as beautiful, and its performances over the roughest American roads, without a single repair or adjustment, far surpass the performances of any foreign car. For use in America the Matheson is worth **more** than any foreign car you can buy.

REASONABLE DELIVERIES

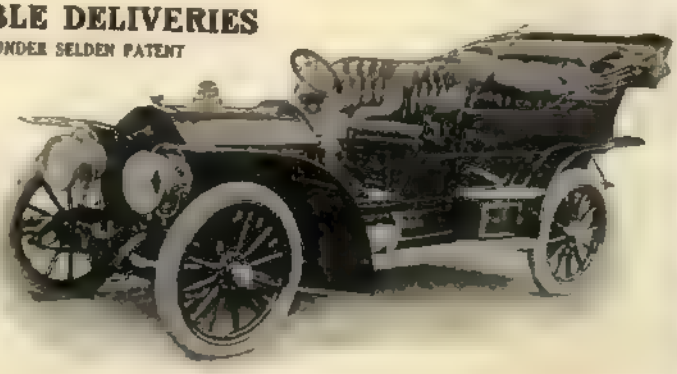
LICENSED UNDER SELDEN PATENT

Touring Cars

Runabouts

35 H. P., - $4,500

50 H. P., - $5,500



REPRESENTED IN

California—The Matheson Co. of California, 442-70 Golden Gate Ave., San Francisco, Cal. James Morley, 220 South Spring St., Los Angeles, Cal. Canada—Mc A. S. Urquhart, Calgary, Alberta, Can. Massachusetts—The Matheson Co. of Boston, 42 Massachusetts Ave., Boston, Mass. Illinois—The Matheson Co. of New York, Western Agency, 1347 Michigan Ave., Chicago, Ill. Missouri—The South Side Auto Co., 2609 South Grand Ave., St. Louis, Mo. New Jersey—Hudson County Auto Co., 2893 Boulevard, Jersey City, N. J. The Matheson Co. of New Jersey, 76 Clinton St., Newark, N. J. Long Branch Auto Co., Long Branch, N. J. New York—Albany Garage Co., 284 Howard St., Albany, N. Y. Watertown Auto and Supply Co., Watertown, N. Y. H. D. Clinton Auto Co., Binghamton, N. Y. Rochester Automobile Co., 50-150 South Ave., Rochester, N. Y. Ohio—Central Auto and Supply Co., 69 Ninth St., S. E., Cleveland, Ohio. Pennsylvania—Tilman, Leeds & Co., Broad and Cherry Sts., Philadelphia. Virginia—Motor Transfer Co., Richmond, Va.

The MATHESON COMPANY of New York

1619-21-23 Broadway

THE JEWEL

MODELS 1908

STANHOPE - $600
RUNABOUT - $500

The ideal car for every use.

Will go and return anywhere any car at any price can go.

Our two-cycle three-port engine produces additional power at minimum cost.

No valves, cams nor gears in engine to get out of order and cause expense.

Write to-day for catalog giving full description and reasons why you should buy a **JEWEL.**

THE FOREST CITY MOTOR CAR CO.

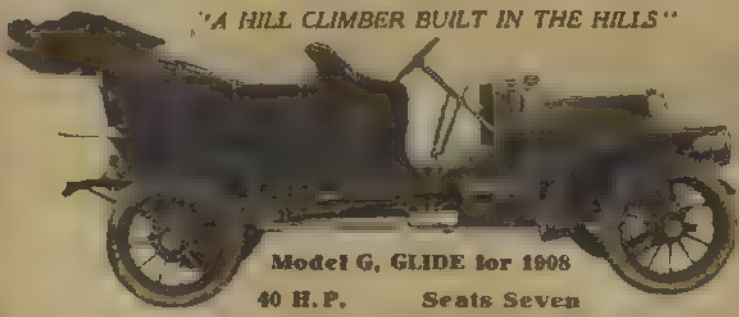
119 WALNUT ST., MASSILLON, O.

The Glide

1000 inches Braking Surface make

"THE GLIDE" the Car of Control

"A HILL CLIMBER BUILT IN THE HILLS"



Model G, GLIDE for 1908
40 H.P. Seats Seven

Nearly three times as much braking surface as is even claimed by any other car. This is only one of the reasons why Model G. GLIDE for 1908 is the most popular car on the market, and it is the most popular. Another is its noiselessness.

When You Run a GLIDE You Hear No Noise

Save the Obedient Whisper of the Motor

For this fact it costs less to sell a GLIDE than any other car. We will show you the figures. The big demand makes it the paying car for dealers. More sales less trouble and expense. *Write for handsomely illustrated catalog.*

The BARTHOLOMEW COMPANY, 210 Glide St., Peoria, Ill.

Members American Motor Car Manufacturers' Association, New York

Indisputable Proof

against unwarranted arrest is afforded the Motorist by the

Jones Speedometer with Maximum Hand

It combines in addition to the regular black variable speed hand a Maximum speed hand red in color, which moves forward only, thus indicating at all times the maximum speed the car has attained.

When released by a touch on the resetting stem this hand drops automatically and instantly to the speed at which the car is at that moment traveling, remaining there even after the car is subsequently stopped.

When reset at officer's command to stop its protective value is obvious.

The resetting stem may be sealed immediately revealing any unauthorized use of the car

By a single turn of the resetting stem the maximum feature may be dispensed with and both hands made to act as one, showing variable speed only

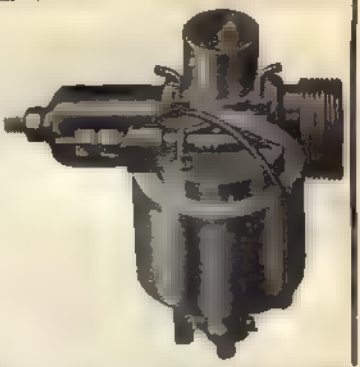
JONES SPEEDOMETER CO.,

124 West 32d St.,
New York

Kalamazoo Multiple-Jet Carbureter

(Patent pending)

TWO distinct carbureters in one frame. One designed and adjusted for delicate manipulation and low speed. The other for high speed and great power. Both operated by the same balanced throttle. Accurately compensated by auxiliary air ports. One pipe to warm air will supply all inlets. All adjustments on top. The result of three years' experiment on the road.



THE MOST EXPLOSIVE MIXTURE at low throttle.
THE MOST ECONOMICAL MIXTURE at medium throttle.
THE MOST POWERFUL MIXTURE at full throttle.

Write for Circular A.

KALAMAZOO CARBURETER CO., 1301 Grand Ave., Kalamazoo, Mich.

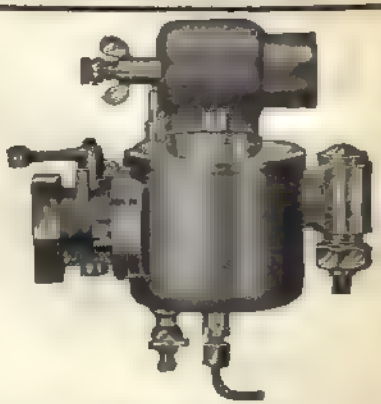
Let us quote you for your requirements on Roller and Thrust Bearings, also Screw Machine Work and Pressed Metal Parts.

Quick Deliveries.

Geo. A. McKeel & Co.
LIMITED

JACKSON, MICH.

Auto Department



"Acorn" Carbureter

RELIABLE CARBURETER
ACORN "
ECLIPSE "
GENERATOR AND CHECK VALVES, PLUGS, ETC.

Write for Circular "D"

BAIRD-BANKS MFG. & SUPPLY COMPANY

35 WARREN STREET, NEW YORK CITY.

GEORGE H. TERRY CO
No. 92 Chambers St., New York City
Agents

MR. C. S. KNOWLES
No. 7 Arch Street, Boston, Mass
New England Sales Agent

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(Patent pending)

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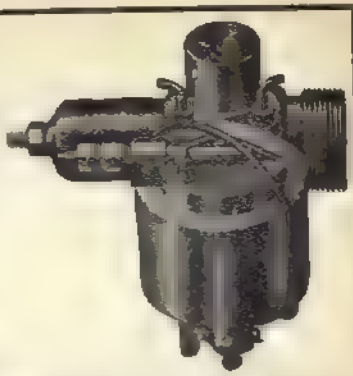

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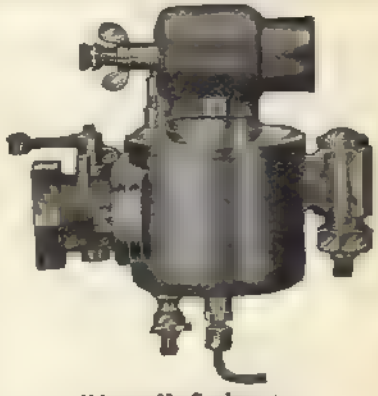

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B-B-CARBURETER
ACORN "
ECLIPSE "
GENERATOR AND CHECK VALVES, PLUGS, ETC.

Write for Circular "D."

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203 BROADWAY, NEW YORK CITY.

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No. 92 Chambers St., New York City
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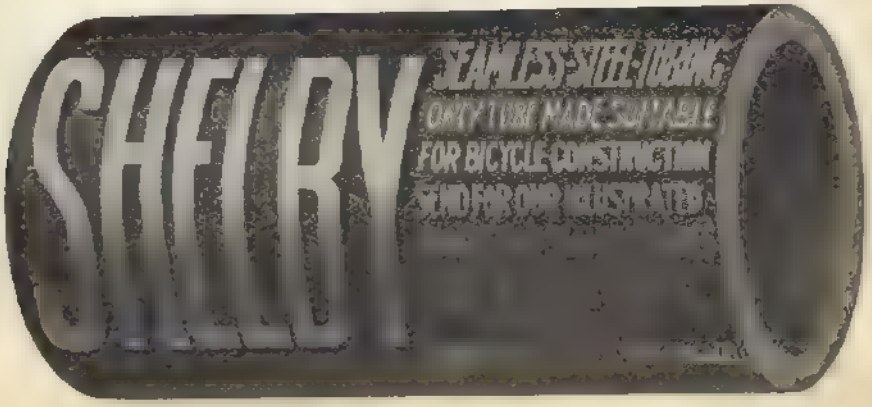

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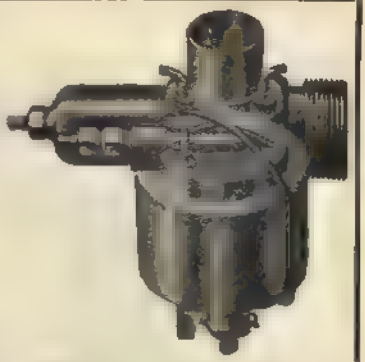

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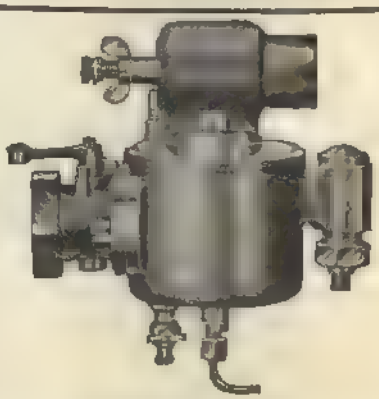

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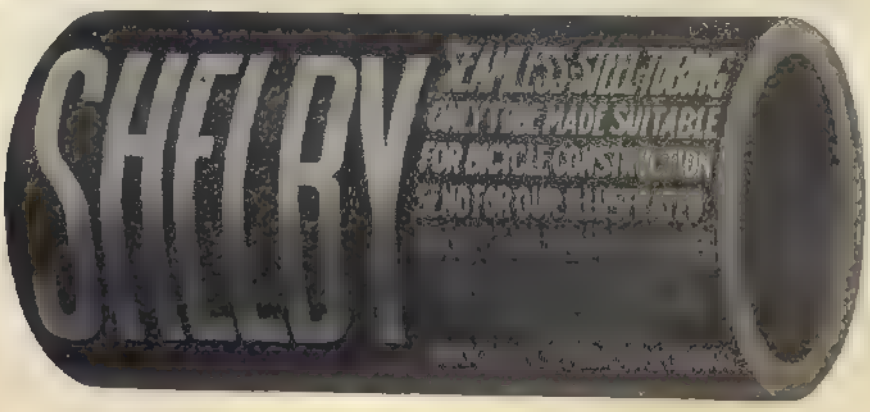
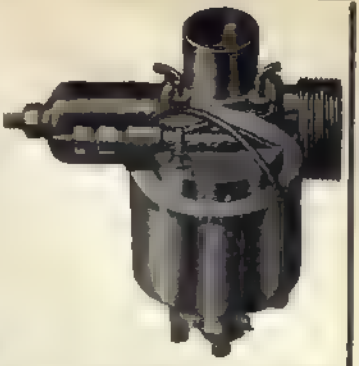


Kalamazoo Multiple-Jet Carbureter

(Patent pending)

TWO distinct carburetors in one frame. One designed and adjusted for delicate manipulation and low speed. The other for high speed and great power. Both operated by the same balanced throttle. Accurately compensated by auxiliary air ports. One pipe to warm air will supply all inlets. All adjustments on top. The result of three years' experiment on the road.



THE MOST EXPLOSIVE MIXTURE at low throttle.
THE MOST ECONOMICAL MIXTURE at medium throttle.
THE MOST POWERFUL MIXTURE at full throttle.

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KALAMAZOO CARBURETER CO., 1301 Grand Ave., Kalamazoo, Mich.

Let us quote you for your requirements on Roller and Thrust Bearings, also Screw Machine Work and Pressed Metal Parts.

Quick Deliveries.

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FOR AUTOMOBILE AND MACHINERY MANUFACTURERS

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WE ALSO MANUFACTURE
STEAM HAMMER FORGED
HIGH GRADE CRANK SHAFTS
EITHER ROUGH FORGINGS OR COMPLETELY MACHINED.

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SHELBY
SEAMLESS STEEL TUBING
ONLY TUBE MADE SUITABLE FOR BICYCLE CONSTRUCTION
SEND FOR OUR ILLUSTRATED

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The **KIBLINGER** is the original motor buggy. It is thoroughly reliable, economical to maintain and the price is within the reach of everybody. We especially invite correspondence from reliable Automobile Dealers. Ask for catalogue and Dealers' discounts.

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The Elwell-Parker Electric Company of America
CLEVELAND, OHIO.

Designers and Builders of

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for

Passenger and Freight Purposes.

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Our new model is the result of four years experience in building air-cooled cars and the best light car that has ever been made.

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Member Association Licensed Automobile Manufacturers

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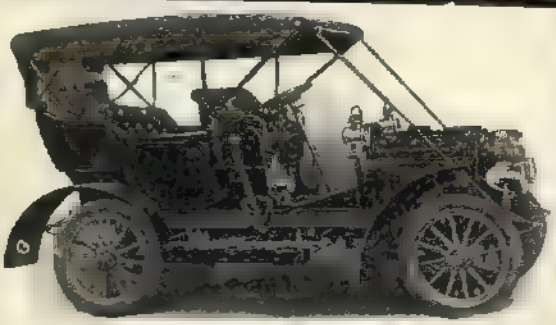
1888 Broadway, 62d St., New York
Motor Mart, Boston, Mass.



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Price, $2000
Without Top.

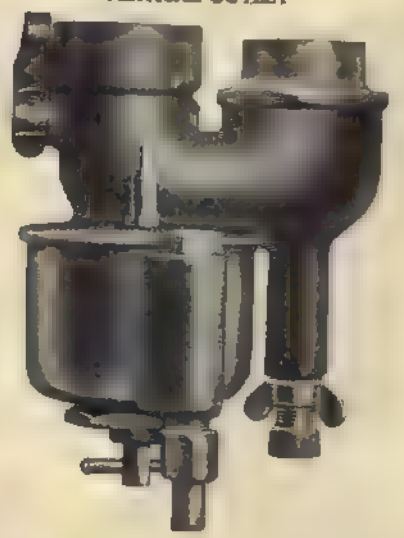
LANE SALES CO.,
514-518 W. 145 St., N. Y.
A Steamer that is reliable.

4 MODELS.

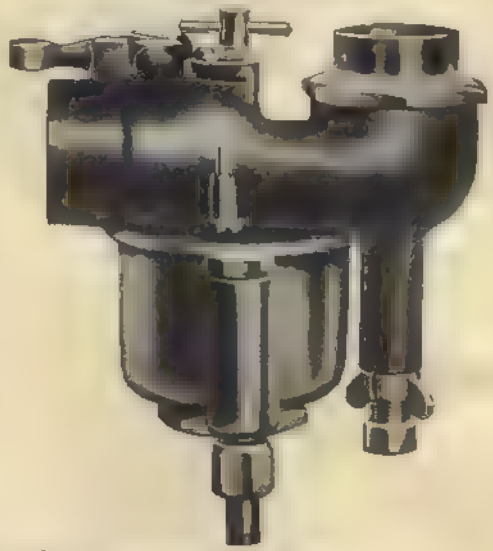
LANE MOTOR VEHICLE CO., Poughkeepsie, N. Y.

KINGSTON
1907 CARBURETORS

VERTICAL OUTLET



HORIZONTAL OUTLET



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Olds Motor Works	Motorcar Co.	Austin Auto Co.
Ford Motor Co.	Detroit Auto Vehicle Co.	Logan Construction Co.
Haynes Auto Co.	Buckeye Mfg. Co.	Armac Motor Co.
Wayne Auto Co.	Rapid Motor Vehicle Co.	
E. R. Thomas Detroit Co.	Continental Motor Mfg. Co.	And many others.

Over 55,000 Kingston Carburetors Now in Use

KINGSTON MUFFLERS

Byrne, Kingston & Co., Kokomo, Ind., U. S. A.

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"HANDY" GENERATORS

Simplest and Most Satisfactory on the Market

Made in Two Sizes
2 and 5 lb. Carbide
Capacity.

All Parts Easy of Access.

Can be emptied and renewed in one minute without soiling hands

No. 5 Size, $17.00 Each, List — No. 6 Size, $30.00 Each, List

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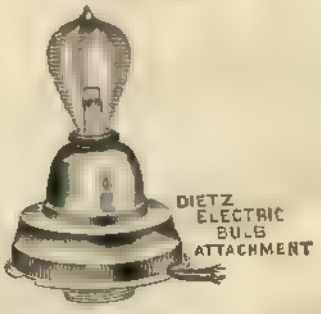
"Presto" Acetylene Burner

This Burner Will Change Our Oil Lamps to Acetylene Instantly.

Electric Burner



This Attachment Will Change Our Oil Lamps to Electricity Instantly.

Write for Complete 1907 Catalog and Price List, and Discounts

R. E. Dietz Company

LARGEST MANUFACTURERS OF LANTERNS IN THE WORLD

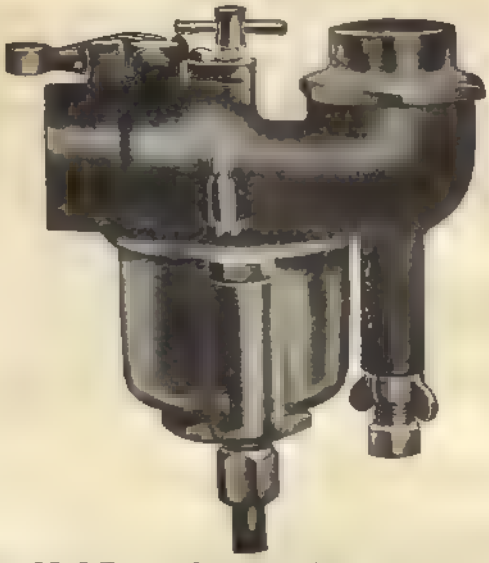
60 Laight Street, New York, U. S. A.

ESTABLISHED 1840

KINGSTON
1907 CARBURETORS

VERTICAL OUTLET

HORIZONTAL OUTLET



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Olds Motor Works	Motorcar Co.	Austin Auto Co.
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Over 75,000 Kingston Carburetors Now in Use

KINGSTON MUFFLERS

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KINGSTON SPARK COILS FOR Quality and Quantity

The phenomenal success of the Kingston Coil has induced many of the oldest coil makers in this country and Europe to try to copy Kingston quality and quantity. Watch them.

Kingston Switch

Price $1.00

Prices of Kingston Jump-Spark Coils.

Single cylinder plain box vibrator coil	$ 7.50
Double " " " " "	15.00
Triple " " " " "	22.50
Quadruple " " " " "	30.00
Single dash vibrator coil with switch	12.50
Double " " " " "	22.50
Triple " " " " "	32.50
Quadruple " " " " "	42.50
Sextette " " " " "	62.50
Units for dash coils	9.00
Motor cycle standard coil	9.00

Special Discounts to Manufacturers and Dealers.

Send for Descriptive Booklet. For Sale by all Jobbers.

Kokomo Electric Co., Kokomo, Ind.

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JOHN MILLEN & SON, Montreal and Toronto

THE SQUARE TUBE EFFECT

Livingston

RADIATORS!

THE PATENTED

LAPPED EDGE TUBES

GUARANTEE

FREEDOM from LEAKS, GREATER STRENGTH and EFFICIENCY

AND PERMIT OF A

LIGHTER CONSTRUCTION

THAN ANY OTHER METHOD

1907 Cars will be out of date without a Square Tube Radiator.

HEWITT MOTOR CO.

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Kingston Switch

Price $1.00

Prices of Kingston Jump-Spark Coils.

Single cylinder plain box vibrator coil	$ 7 50
Double " " " " "	5 00
Triple " " " " "	7[illegible]
Quadruple " " " " "	30 00
Single dash vibrator coil with switch	11 50
Double " " " " "	22 50
Triple " " " " "	3[illegible]
Quadruple " " " " "	42 50
Sextette " " " " "	62 50
Units for dash coils	9 00
Motor cycle standard coil	9 00

Special Discounts to Manufacturers and Dealers.

Byrne, Kingston & Co., Kokomo, Ind., U. S. A.

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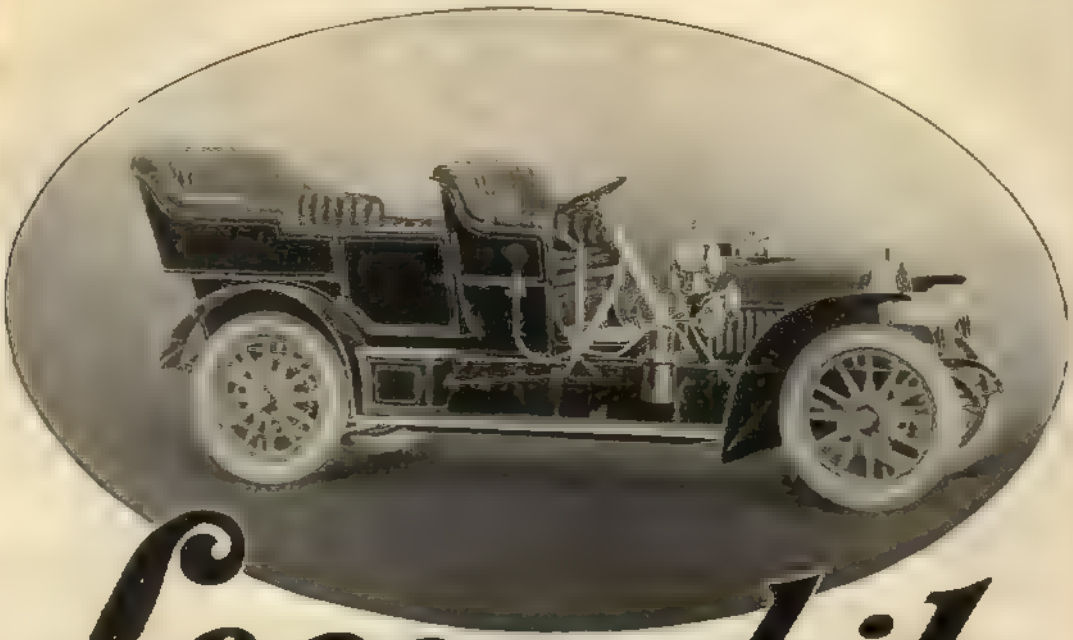

Locomobile

The Most Reliable Car Built in America

All models equal throughout in quality

$2800

Type E, $2800
Three other models
$3800 to $5800

1907 Locomobile MODELS

TYPE E Standard
(Price $2800)
Horse Power [illegible]
Motor [illegible]
Wheel base [illegible] inches
Spark [illegible]
Magneto [illegible]
Bearings Hess-Bright
Seats [illegible]
Tires, [illegible] All lamps.

TYPE E Limousine
Price $3800
Horse Power 25
Wheel base 120 inches
Seats 7 adults
Front tires 32x4
Rear tires 32x4
Annunciator dome light, tonneau set five lamps etc.
Lancaulet, $4000

TYPE H Standard
(As illustrated above)
Price $4500
Horse Power 35
Motor 4 cylinder
Wheel base 120 inches
Magneto low tension
Bearings Hess-Bright
Seats, 7 adults.
Front tires, 34x4
Rear tires, 34x4½

TYPE H Limousine
Price $5800
Body Limousine
Horse Power 35
Wheel base 120 inches
Seats 7 adults
Front tires 34x4
Rear tires 34x5
Annunciator dome light, tonneau set five lamps.

Member Association of Licensed Automobile Mfrs

The Locomobile Company of America, Bridgeport, Conn.

NEW YORK Broadway and 76th St.
PHILADELPHIA, 245 N. Broad St.
Branches
BOSTON, 15 Berkeley Street
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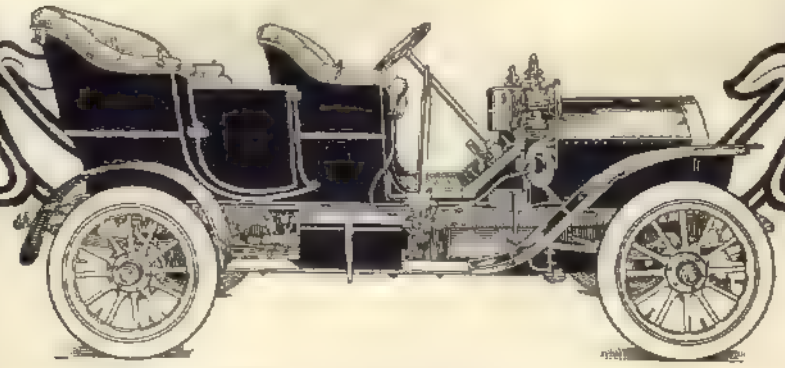
KNOX

Go into details

on every other car of its price, $2500, and compare them with the Model "H" Knox Waterless and we shall write the receipt for you. It is a "thoughtful" car, full of extraordinary merit. Nothing superfluous nothing missing, and all that there is the best. It is essentially an owner's car, simple, durable, handy, and as nearly as possible, troubleless, with more horsepower per pound than any other car in its class.



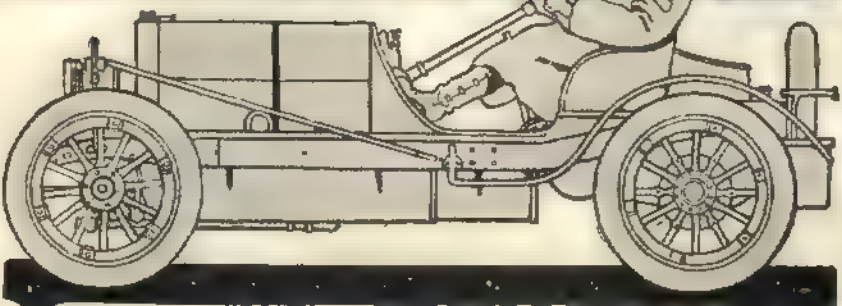
Specifications: 25-30 road horsepower; weight 2250 lbs.; 32" x 4" tires; 102" wheelbase; automatic oiling; three speed selective transmission; deadstop brakes; compensating carbureter; straight line shaft drive; price, $2500. With detachable tonneau and torpedo deck, $2550. Let us send you our 1907 illustrated catalogue, or, better still, arrange for a demonstration.

KNOX AUTOMOBILE COMPANY

Member A. L. A. M.

Springfield, Mass.

B.L.M.



THE B. L. M. is a 24 H. P. racer. By this we mean not only that its lines and its speed are those of a small racing car, but that all the principles of construction, all the perfection of detail in the finish of its parts are those which are embodied in those great racing machines on which manufacturers stake their reputations. This speed, this ability to withstand a terrific strain, this combination of strength with lightness makes for so great a cost that the manufacturer cannot possibly afford to put out a touring car or a runabout to compare with the speed marvel which represents him in events such as the Vanderbilt Cup Race. You do find these qualities in the B. L. M. at $3500.

THE average runabout is only a chassis of the standard touring car with a runabout body slapped on. Its owner has the same cost of upkeep as a man owning a touring car. While weight has been reduced only 150 to 200 pounds, carry capacity has been reduced 40 to 50 per cent., and speed and power as compared to weight increased only 5 per cent. The B. L. M. is much lighter than any runabout in the country and still it is built as substantially as any racing car.

THE B. L. M. is designed and constructed for one purpose only: to give you all the endurance, lasting value, perfection of construction, and perfect efficiency at all times of a racing car, which it resembles in every way save in point of size. It has the added advantage of being practically unskiddable. One can fly around corners at a very great speed without danger of upsetting or skidding, its centre of gravity is such, its suspension so perfect that it is the *safest* car you can use for *any* purpose.

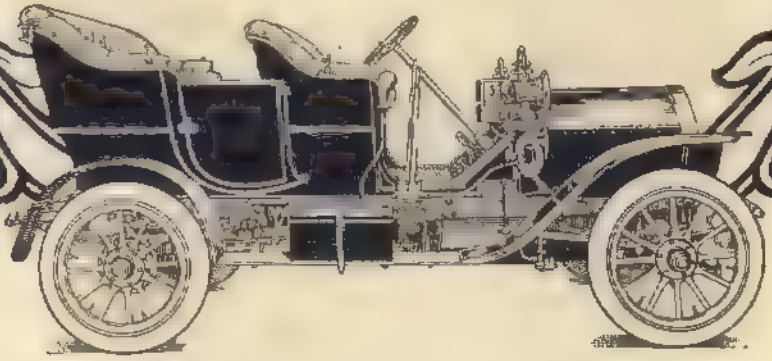
THE B. L. M. has a perfection of detail entirely lacking in racing cars, which makes it the most complete and comfortable car in the world for a long, fast tour. Its tires are carried on imported Harburg detachable rims, a pair of spare tires, fully inflated on their rims, carried behind, enables one to defy punctures or other tire troubles, as tires can be changed in a moment. Its light weight, only 1,400 lbs., enables many an owner to make thousands of miles over all sorts of roads on a single set of tires. Equipment includes Rushmore lamps, a generator, a spare rim and all ordinary tools. Write for our catalog number 23. It is a wealth of information on the points which make for greatness in a car.

B. L. M. MOTOR CAR CO., 29 West 42d St., N. Y.

KNOX

Go into details

on every other car of its price, $2500) and compare them with the Model "H" Knox Waterless -and we shall write the receipt for you. It is a "thoughtful" car, full of extraordinary merit. Nothing superfluous nothing missing, and all that there is the best. It is essentially an owner's car, simple, durable, handy, and as nearly as possible, troubleless, with more horsepower per pound than any other car in its class.



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KNOX AUTOMOBILE COMPANY

Member A. L. A. M.

Springfield, Mass.

Moline

In the Sealed Bonnet, Non-Stop Motor Reliability Contest, of the Chicago Motor Club, on Friday June 28th, there were two MOLINE cars entered, as Numbers 69 and 70 These machines were handled by drivers, who had never had any previous experience in a race or a contest of any sort, and had never been over the course Both machines, with bonnets and coil boxes sealed, went through the Contest, over 174 miles of country roads, with perfectly clean scores, not a mark against them of any kind, the engines not being stopped until long after the Contest was over, after the cars had been put away for the night.

On Saturday, June 29th, the day following the Contest, one of the same cars, with seals still on, was driven from Chicago to the factory at East Moline, where the seal was broken, and the engine found in perfect condition.

A performance of this kind goes a long ways toward proving that MOLINE cars are thoroughly reliable.

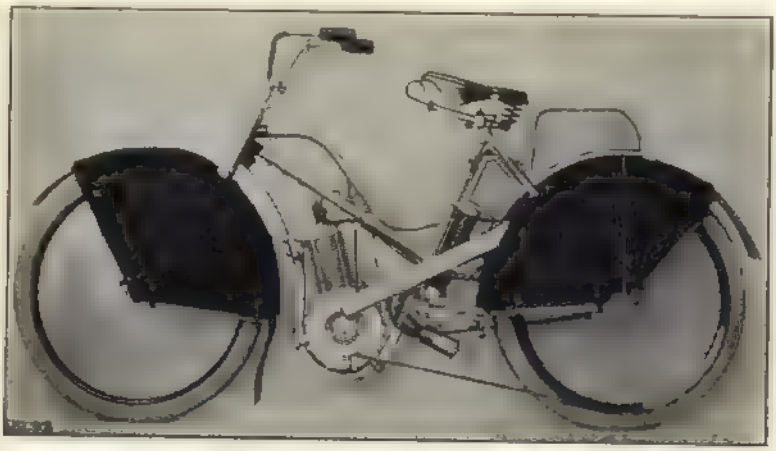
Moline Automobile Co.

East Moline, Ill.

Member of American Motor Car Manufacturers' Association.

Ladies' Model "Wagner" Motor Cycle

The Wagner Motorcycle Co., 319-327 Saint Peter street, St. Paul, Minn., has recently placed on the market a ladies' model "Wagner" motorcycle which is shown herewith



"Wagner" Motor Cycle, Ladies' Model; price $210, 3 H. P. Wagner motor, V belt transmission, 26 inch wheels, steel rims; 2½-inch Goodrich or G. & J. extra heavy detachable tires, sight feed lubricator manipulated from the saddle top, copper gasoline tank, 1-qt. oil reservoir, Wagner carburetor; jump spark ignition with 3 No. 6 dry cells; control in right grip, wheel base, 52 ins. Persons motor seat, Morrow coaster hub, speed 4 to 35 miles per hour, weight 130 lbs.

Their regular 1907 model was described in our February, 1907, issue, page 408. The general specifications, material, workmanship, finish and equipment are the same for the ladies' model as for their regular model with the exception of the frame, and the changes in position of the tanks made necessary in designing the drop frame

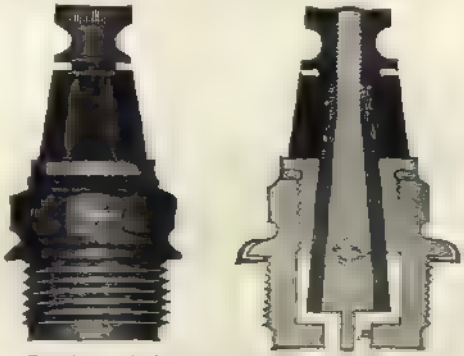
A feature of this machine that will appeal to the lady motorcyclist is its absolute cleanness. Both wheels are covered with full canvas dust shields which thoroly protect the rider from the dust of the road Both chain and belt have metal guards. The position of the engine is such that the skirts of the rider cannot be soiled or burnt by coming in contact with it, thus permitting the use of a riding skirt of ordinary length

The frame is low, making the mounting and dismounting as easy as with an ordinary bicycle. The saddle and bars are so placed that the rider can assume a natural upright position with ease and comfort. The price of the ladies' model is $210.

The "Splitdorf" Motorcycle Spark Plug

A specially designed spark plug particularly adapted to the unusual conditions existing in small air-cooled engines of the motorcycle type, has just been placed on the market by the well-known ignition specialist, C. F. Splitdorf, Walton avenue and 138th street, New York.

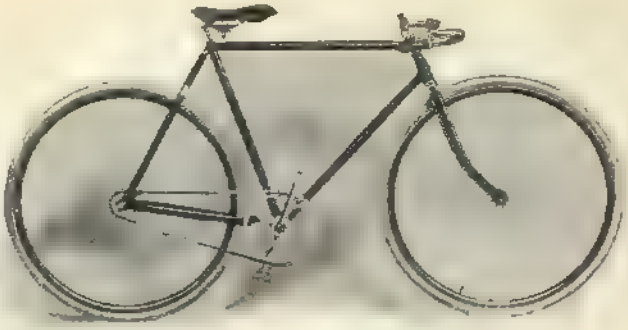
This plug is made by winding sheets of mica in the form of a taper bushing This bushing is inserted into a taper hole in a steel bushing, the taper hole conforming to the mica winding. It is then forced tight by a tapered central electrode. This central electrode is forced below the end of the mica bushing 3/8 of an inch, thus forming an insulative surface of 3/4 of an inch, the walls of mica being 1-16 of an inch thick. In addition to this a porcelain bushing is used to insulate the outer shell of the main bushing which increases the insulating surface to 1¼ inches. By the use of this large insulating surface the resistance to soot deposit is so great that the greater body of the current will take the gap instead of allowing it to be shunted thru the soot surface. As the porcelain is held by soft gaskets no strain comes on it from the expansion of the metal parts



Exterior and Sectional Views of the "Splitdorf" Motorcycle Spark Plug

Another desirable feature of this construction is that there is never any great amount of gas in the chamber of the plug, and excessive heating of the insulation is thus avoided. The plug is screwed into a large shell, McKim copper and asbestos gaskets being used to insure its being tight under compression, and at the same time easy of removal if necessary.

1907 YALE AND SNELL BICYCLES

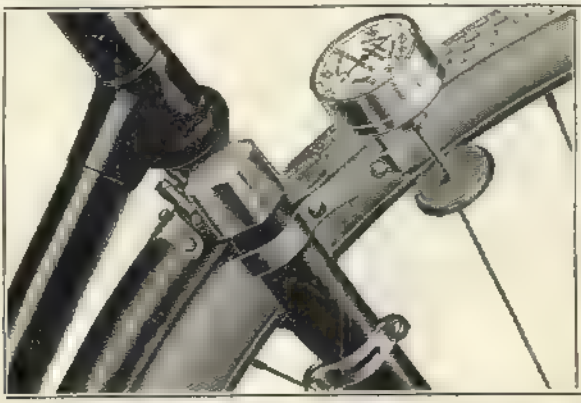


Product of the LARGEST Manufacturer of HIGH GRADE BICYCLES in the UNITED STATES. We have ALL satisfied agents and riders. They receive value for their money. Would you like to join our family?

A card will bring our catalogue.

The Consolidated Manufacturing Co.

STATION "B." **TOLEDO, OHIO.**



Motor Cycle Accessories
THAT ARE WORTH WHILE

Simplex Speedometer
Accurate and Reliable, $5.00

Simplex Headlight
The very best imported, $10.00

Simplex Siren . . $16.00

Waterproof V Belts, Simplex Belt Hooks, Cable Clips, Bowden Wire, Belt Rims, etc.

Sole U. S. Agent for the World Famous Peugeot Motors.

Prospect Motor Mfg. Co.
7-9 Park Place, Brooklyn, N. Y

Hussey Handle Bars

ARE THE BEST. Mr. Dealer,

Specify them on your bicycles regardless of make.

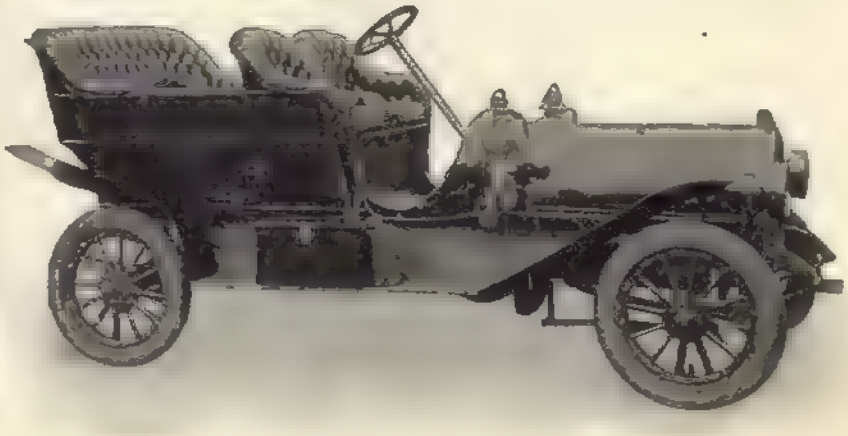
They will help make sales.

THE CONSOLIDATED MANUFACTURING CO.,
Station "B". Toledo, Ohio

More Miles for Your Money

in a

LAMBERT Patented Friction Drive Car

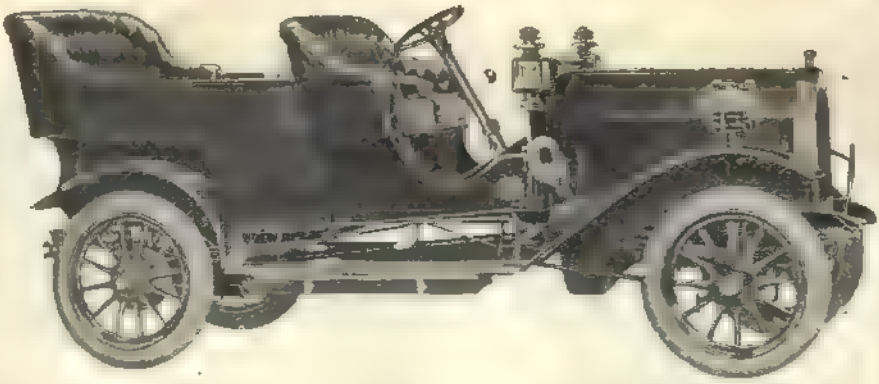


The Friction System is the Safest, Surest, most easily controlled and least likely to get out of repair. It is easy on every part of the car and practically "Fool Proof."

MADE BY

The Buckeye Mfg. Co., Anderson, Ind.

Write for Art Catalog showing our different Models.



What is "The item of Depreciation"?

"Ask the man" who buys a car one year for $2500 and advertises it next season for $1200.

The "item of Depreciation" is going to cost him $1300. On higher priced cars it often runs a great deal more.

Do you think you could let that $1300 go willingly just because your car was a little **behind** the times instead of a good deal **ahead**?

You don't have to.

You can buy a "Silent Northern," the car that has survived the test of four seasons in the hands of the users without any important changes in design—

—the car you never see advertised in the second-hand columns—

—the car whose purchasers have enjoyed the comfortable satisfaction of **charging less to Depreciation** than the purchasers of any other car—

—the car designed **ahead of the times**—

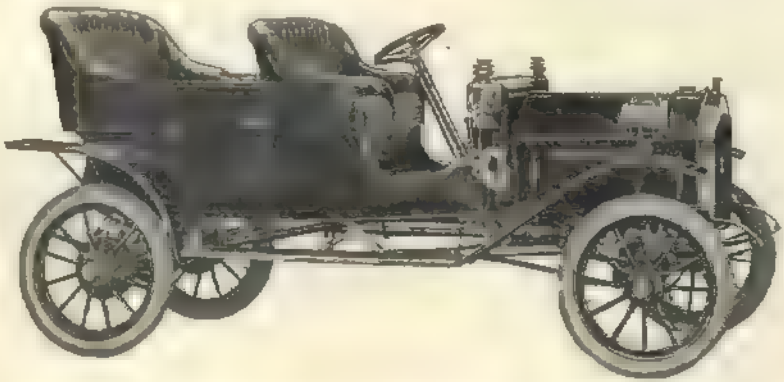
—the highest priced 2 cylinder car—and **the best.**

If you think the "Item of Depreciation" is worth **saving,** send for the handsome "Northern" catalog.

50 H. P., 4 cylinders, with self-adjusting air-clutch and air-brakes—$3500.

22 H. P., 2 cylinders—$1700.

All prices F. O. B. Factory.



NORTHERN

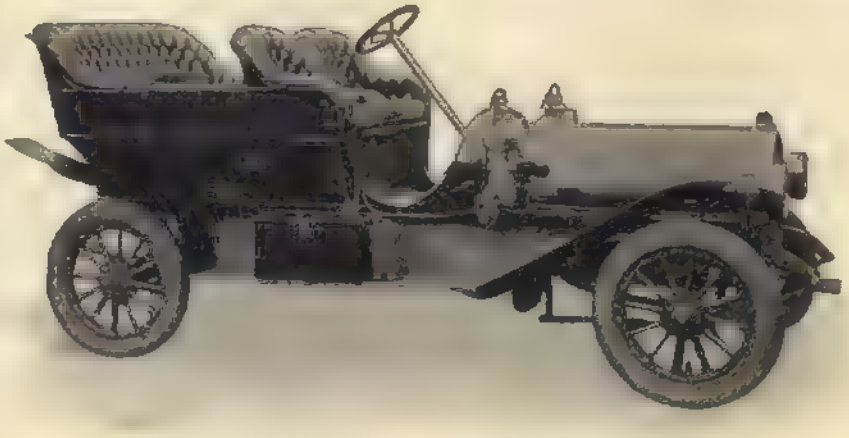
MOTOR CAR CO., DETROIT

Member Association of Licensed Automobile Manufacturers.

More Miles for Your Money

in a

LAMBERT Patented Friction Drive Car



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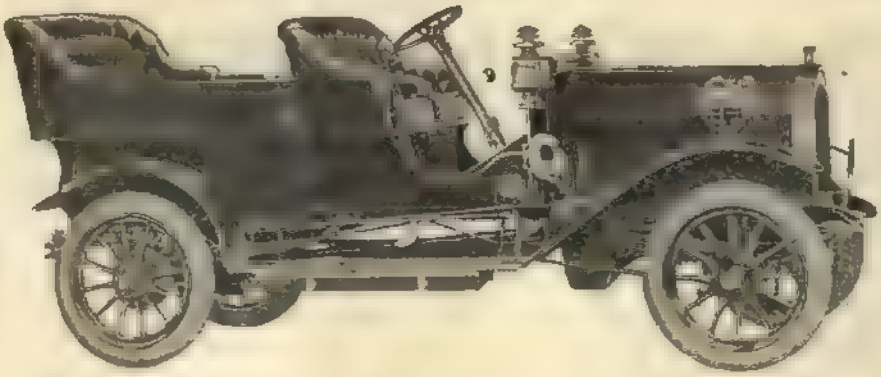
The Buckeye Mfg. Co., Anderson, Ind.

Write for Art Catalog showing our different Models.



What is "The item of Depreciation"?

"Ask the man" who buys a car one year for $2500 and advertises it next season for $1200.

The "item of Depreciation" is going to cost him $1300. On higher priced cars it often runs a great deal more

Do you think you could let that $1300 go willingly just because your car was a little **behind** the times instead of a good deal **ahead?**

You don't have to.

You can buy a "Silent Northern," the car that has survived the test of four seasons in the hands of the users without any important changes in design—

—the car you never see advertised in the second hand columns—

—the car whose purchasers have enjoyed the comfortable satisfaction of **charging less to Depreciation** than the purchasers of any other car—

—the car designed **ahead of the times**—

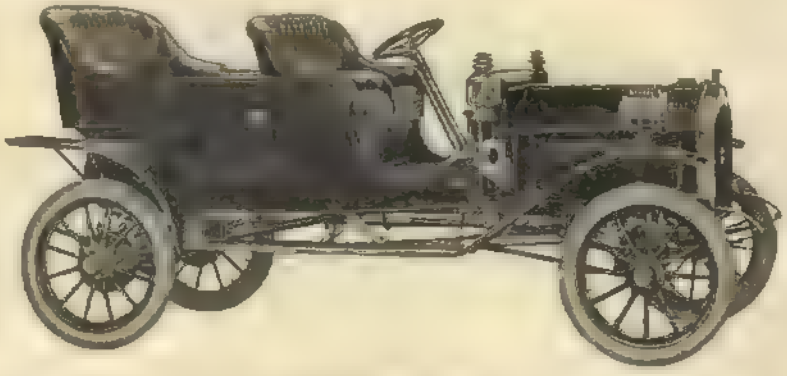
—the highest priced 2 cylinder car and **the best.**

If you think the "item of Depreciation" is worth **saving,** send for the handsome "Northern" catalog.

50 H. P., 4 cylinders, with self-adjusting air-clutch and air-brakes—$2500.

22 H. P., 2 cylinders—$1700.

All prices F. O. B. Factory.



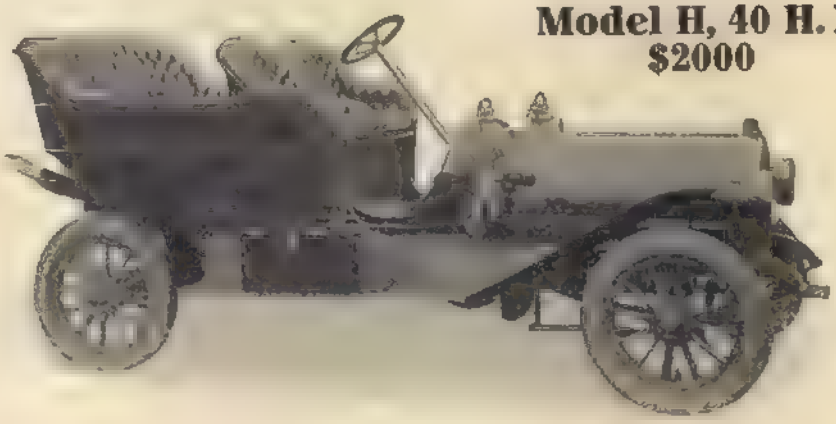
NORTHERN

MOTOR CAR CO., DETROIT

Member Association of Licensed Automobile Manufacturers.

LAMBERT Friction Flyer

Combines more good points than any car on the market



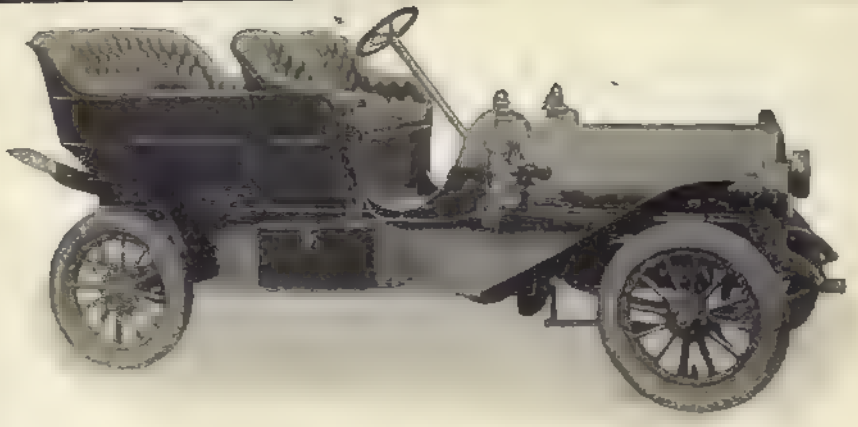
Model H, 40 H. P.
$2000

It is up to the minute in construction from the motor to the smallest bolt in the car.

Starts easy—rides easier—costs less. Ask for a demonstration from our nearest agent or write direct to the BUCKEYE MFG. COMPANY, Anderson, Indiana, for handsome art catalogue, describing our models.

DELIVERY GUARANTEED WITHIN THREE DAYS OF RECEIPT OF ORDER

LAMBERT
Friction Flyer



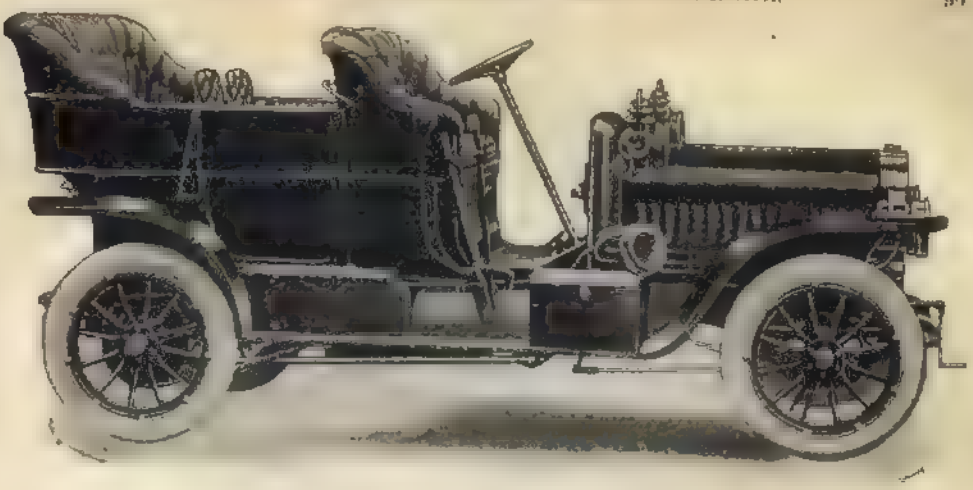
Model H, $2000

The Friction Drive is indorsed and recommended by America's greatest mechanical experts.

Write for our art catalogue.

BUCKEYE MFG. CO.
ANDERSON, INDIANA

Members American Motor Car Manufacturers' Association, New York



Model "G"

THE LAMBERT

The Lambert Line of **FRICTION DRIVE** Automobiles is one of the most popular on the market. This popularity is deserved, and is a result of the satisfaction the cars give in actual service. The construction is perfectly practical and simple, and the noiseless friction drive immeasurably ahead of the complicated spur gear system.

The Lambert Line for 1907 offers a choice of models to meet all demands, since it includes the following:

Model F, 5 passenger,—40 H. P.—$3,000 (full equipment)
Model G,—7 passenger,—40 H. P. —$2,500
Model H, 5 passenger,—40 H. P. —$2,000
Model J,—2 passenger,—40 H. P. —$1 800
Model L,—5 passenger,—16 H. P.—$1,200—this model is also made with a 20 H. P. motor, and lists at $1 275

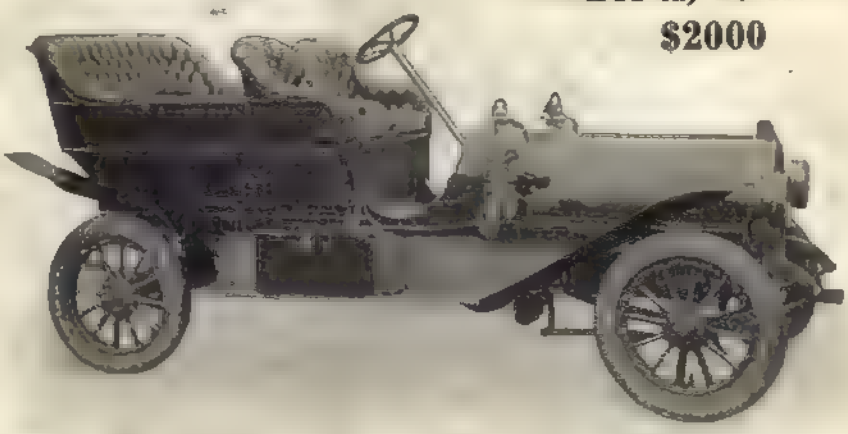
We can take care of a few more agents. Write at once for detailed description of cars, and further particulars.

Artistic New Catalog Now Ready

The Buckeye Mfg. Co., Anderson, Ind.

THE LAMBERT

Model H, 40 H. P.
$2000



Model H. has a 105 inch wheel base, with 56 inch gauge, 32 x 3½ inch tires.

The Motor is of the 4 cylinder type, 4½ x 5 inches, developing full 40 H. P. Friction speed change with bevel gear drive to divided rear axle, tonneau body to seat 5 passengers. Weight, 2,000 lbs. The price of $2,000 includes mats, horn, tools and five lamps, ready to go on the road. Cape top is $150.00 extra.

We doubt if you can match Model "H" at $2,000. It is high grade in design, materials, construction and equipment.

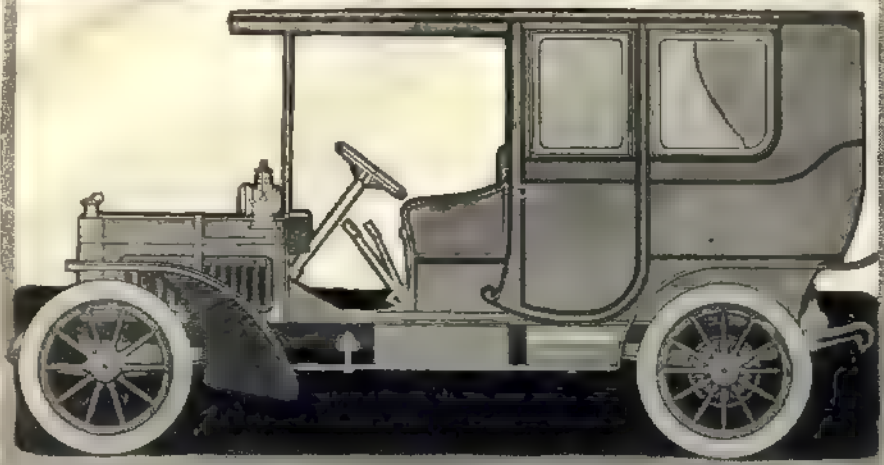
In addition to Model "H", we offer the following models:

Model "F",—5 passenger, 40 H. P. $3,000 full equipment)
Model "G",—7 passenger,—40 H. P.—$2,500
Model "J",—2 passenger,—40 H. P.—$1,800
Model "L",—5 passenger,—16 H. P.—$1,200
Model "L" is also made with a 20 H. P. motor, listing at $1,275.00.

The agent who is anxious to handle a line of ready-sellers, that will give the utmost satisfaction, should investigate the LAMBERT line of friction-drive cars.

WRITE FOR OUR ART CATALOG.

The Buckeye Mfg. Co., Anderson, Ind.



Packard Limousines

RDER now if you want a limousine body for your Packard.

We are building a limited number of up-to-date limousine bodies to fit either the Packard "24" or "30" chassis.

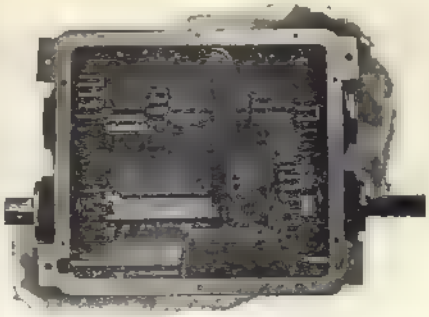
In general appointment, style, comfort, luxury and convenience they achieve the acme of the body builder's art. The quality is Packard quality.

Send for our Limousine Book.

The Packard Motor Car Company
Dept. H DETROIT, MICHIGAN

BROWN-LIPE GEARS

Differentials for chain and shaft drive
Back lock steering Sliding gear transmissions



Catalogue and Blue Prints

E. FRANKLIN PETERSON, 166 Lake St., Chicago
THOMAS J. WETZEL, 29 West 42nd St., New York City } Direct Factory Salesmen

CHAS. E. MILLER, 97 Reade St., New York,
318-320 N Broad St., Philadelphia,
202-4 Columbus, Ave., Boston,
406 Erie St., Cleveland, Ohio } Sales Agent, Carrying Stock.

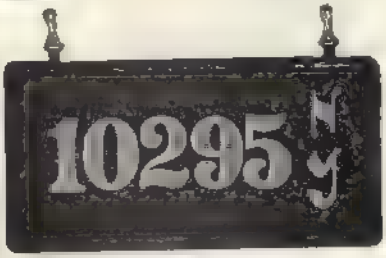
POST & LESTER CO., Hartford, Conn., Eastern Sales Agents

BROWN-LIPE GEAR COMPANY, 206 S. Geddes St., Syracuse, N. Y.

If you want to give an elegant finish to your car, use

Leather Fenders

They are far superior to wood or metal fenders, being more durable, neater and handsomer in appearance.



They are the only equipment for a hige grade car.

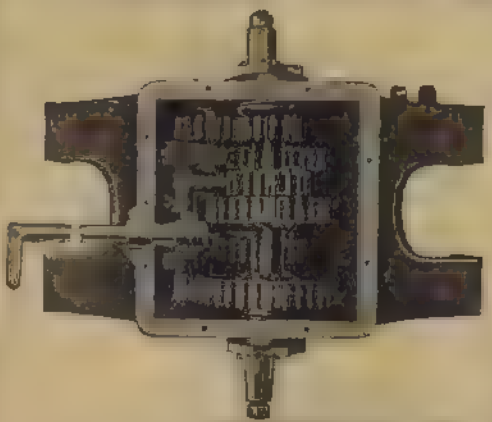
Insist on having yours fitted with LEATHER FENDERS.

We fill orders for leather license tags promptly.

McKinnon Dash Company
BUFFALO, N. Y.

BROWN-LIPE GEARS

SELECTIVE AND PROGRESSIVE SLIDING GEAR TRANSMISSIONS



DIFFERENTIALS AND STEERING GEARS

Direct Factory Salesmen—K. FRANKLIN PETERSON, 166 Lake St., Chicago. THOMAS J. WETZEL, 26 West End St., New York City.

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BROWN-LIPE GEAR CO., 206 S. Geddes St., Syracuse, N. Y.

LEATHER LICENSE PADS

FOR THE TRADE

We can furnish you anything made from patent leather

FENDERS, WIND SHIELDS, FENDER FLAPS, Etc.

McKINNON DASH COMPANY

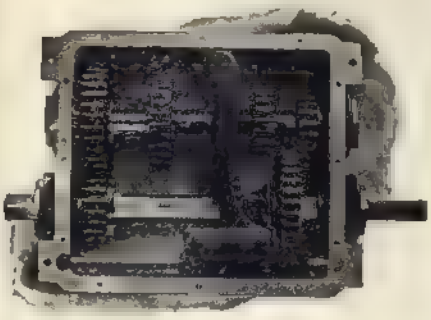
Troy, Ohio
Cincinnati, Ohio

Buffalo, N. Y.

St. Catharines
Ontario

BROWN-LIPE GEARS

Differentials for chain and shaft drive
Back lock steering Sliding gear transmissions



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BROWN-LIPE GEAR COMPANY, 206 S. Geddes St., Syracuse, N. Y.

LEATHER LICENSE PLACARDS

WHOLESALE ONLY

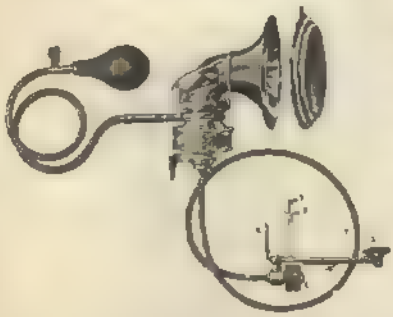
LEATHER COVERED FENDERS

Add 50 per cent. to appearance of automobiles.

McKinnon Dash Company

Troy, Ohio, Cincinnati, Ohio. Buffalo, N. Y. St. Catharines, Ontario.

"LEAVITT'S LATEST" COMBINATION HORN



To meet the demand for a Combined Siren and Reed Horn, we are now manufacturing the "Leavitt Combination Horn." This horn contains all the well-known characteristics of the "Leavitt Siren Horn," and has a reed horn attached. We supply all attachments complete, and the horn can be attached to any car in a few minutes. This horn possesses all the advantages of a siren horn for use in the country and for night traveling and of a reed horn for city use.

IT FILLS A LONG-FELT WANT. THE GREATEST HORN IN THE WORLD FOR AUTOMOBILES.

PRICE, $50.

THE UNCAS SPECIALTY CO. Norwich, Conn.

New York Office, 1555 Broadway.

TEL., 4555 BRYANT

THE BUFFALO CARBURETOR

IS USED AND ENDORSED ON THE FOLLOWING CARS:

Ford "Six Cylinder"
Corbin
Welch
Knox
Wayne
Jackson
Harrison
DeLuxe

Eliminates Carburetor Troubles

Produces greater horse power per gallon, gives perfect control of the motor under all conditions, has great flexibility, and produces a perfect mixture at all speeds

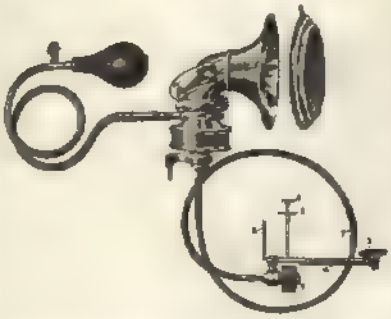
It is a Mechanical Carburetor

The **Haynes** Vanderbilt Cup racer was equipped with a **BUFFALO**, and all 1906 **Thomas** records were obtained with this Carburetor. Our descriptive matter on application. It will give you much to think about.

BUFFALO CARBURETOR COMPANY

889 Main Street, Buffalo, N. Y.

"LEAVITT'S LATEST" COMBINATION HORN



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IT FILLS A LONG-FELT WANT. THE GREATEST HORN IN THE WORLD FOR AUTOMOBILES.

PRICE, $50.

THE UNCAS SPECIALTY CO. Norwich, Conn.

New York Office, 1781 Broadway.

TEL., 5846 COLUMBUS

COATES Unit Link Flexible Shafting.

$\frac{1}{10}$ H. P. or 150 H. P.

All the same to us.

On Speedometers a **Coates** Shaft insures a

DEAD BEAT.

Coates Electric Buffers, Grinder and Drills are still Top-notchers.

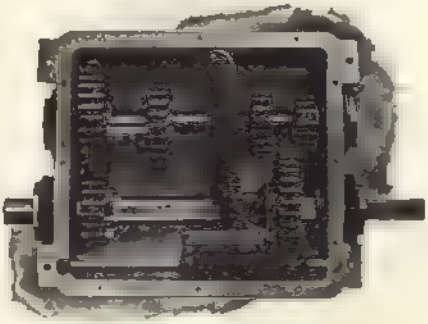
Send for book 43.

Coates Clipper Mfg. Co.

Worcester, Mass., U.S.A.

BROWN-LIPE GEARS

Differentials for chain and shaft drive
Back lock steering Sliding gear transmissions



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BROWN-LIPE GEAR COMPANY, 206 S. Geddes St., Syracuse, N. Y.

We Manufacture The
NEATEST
LICENSE PLACARD

A Strong Light Frame
Covered With
PATENT LEATHER

WIND SHIELDS

USED BETWEEN STEP BOARD AND BODY
MADE TO YOUR PATTERN

Write For Description
And Price

McKinnon Dash Company

Troy, Ohio
Cincinnati, Ohio
BUFFALO, N. Y.
St. Catharines, Ontario

The Greatest of All Motorcycles

The "LIGHT"

3 MODELS

2¼ H. P. Chain Drive, Single Cylinder
3 H. P. GEAR DRIVE, " "
5 H. P. GEAR DRIVE, Twin Cylinder

We Use America's Best Motors The "THOR"

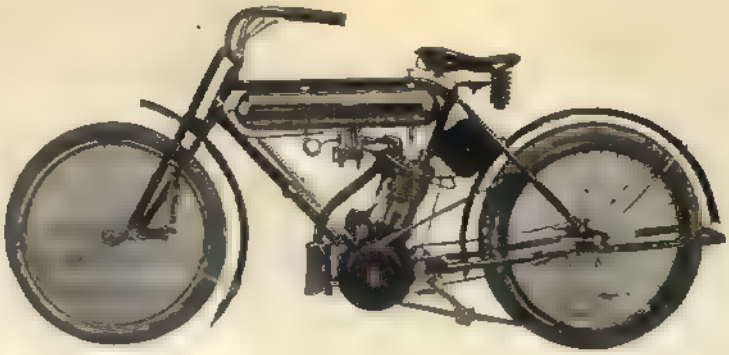
Our GEAR DRIVE is Mechanically Correct and Practical.

See our FRAME CONSTRUCTION, GRIP CONTROL, "RADIO" MUFFLER, COMBINATION GASOLINE, OIL and BATTERY TANK.

Don't Fail to Get Our Agency Proposition

Address, Motorcycle Dept.

THE LIGHT MFG. & FOUNDRY CO.
POTTSTOWN, PA.



M. M. FOR 1908

AND ready for immediate delivery. These machines are equipped with 26″ **Wheels,** 2¼″ G & J tires, 20″ **Frame,** thus allowing the seat post to come in a line with top of frame. Color bright vermillion, option black or M. M. blue, **Full Nickled Rims,** producing the richest appearing Motor Cycle ever built.

Our Engine with its **Newly Designed Cylinder** developing more than 3 H. P., together with the splendid M. M. belt transmission using a 1¼″ wide, highest quality, **Barnes Endless Mineral Tan,** double thick, sewed belt, gives you more power, strength, stability, speed and endurance than any other single cylinder Motor Cycle in the World.

A New Battery Arrangement, New Idler Device for the Chain, with long rear adjusting slot, admitting of a longer range of adjustment, thereby taking up any slack that might appear in the belt, and doing away with the belt idler **Belt Removable Through Rear Frame by Simply Removing One Bolt.**

We are equipping these machines with **Patent Motor Stand,** light, compact and built to the frame ready to hold your machine at a moment's notice.

On tank will be found a priming device in direct connection with the cupped petcock on cylinder head, thus admitting gasolene to cylinder for easy starting in cold weather by simply pressing a button.

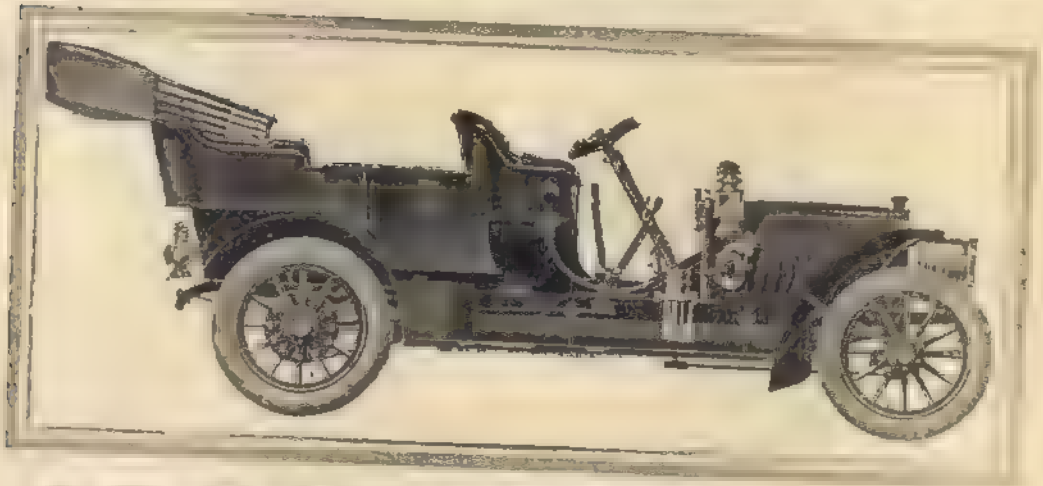
These are only a few of the improved features found on the M. M. for 1908. *Write for our latest circular.*

Agents get busy—good territory still open.

American Motor Company

715 Centre St. **BROCKTON, MASS.**

Locomobile



1908 MODELS

IN this, our tenth annual announcement, we call attention to 1908 **LOCOMOBILES**, in all respects the most reliable and generally attractive cars ever offered. Touring Cars and Town Cars. Two types, 20 H.P. and 40 H.P.; eight distinct models. Make and Break Ignition—4th season; Low tension magneto—4th season. All 1908 cars have four speed selective transmissions, and all desirable refinements.

EARLY FALL DELIVERIES

Advance information mailed on application.

The Locomobile Company of America, Bridgeport, Conn.

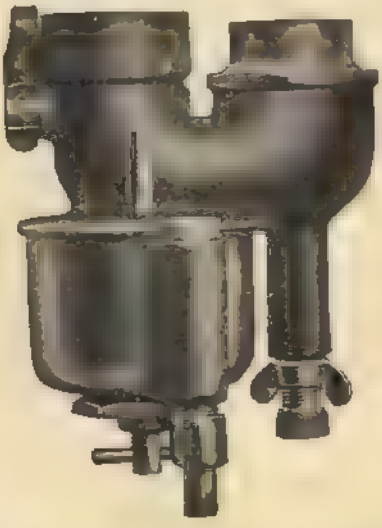
NEW YORK, Broadway and 76th St.
PHILADELPHIA, 245 N. Broad St.

Member Association of Licensed Automobile Manufacturers.

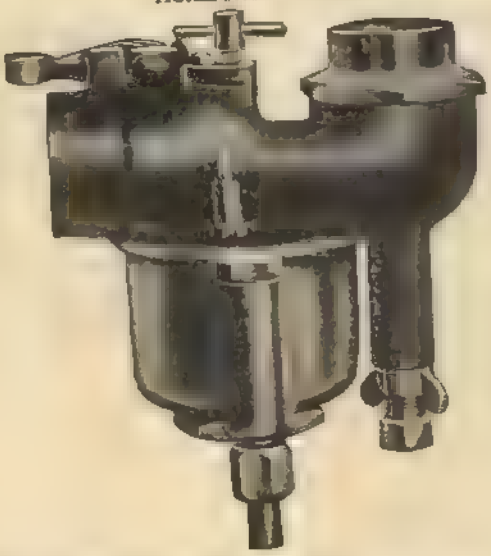
BOSTON, 400 Newburg St.
CHICAGO, 1354 Michigan Ave.

KINGSTON
1907 CARBURETORS

VERTICAL OUTLET



HORIZONTAL OUTLET



Furnished as regular 1907 equipment by

Olds Motor Works
Ford Motor Co.
Haynes Auto Co.
Wayne Auto Co.
E. R. Thomas Detroit Co.
Motorcar Co.
Detroit Auto Vehicle Co.
Buckeye Mfg. Co.
Rapid Motor Vehicle Co.
Continental Motor Mfg. Co.
Austin Auto Co.
Logan Construction Co.
Armac Motor Co.

And many others.

Over 69,000 Kingston Carburetors Now in Use

KINGSTON MUFFLERS

Byrne, Kingston & Co., Kokomo, Ind., U. S. A.

PACIFIC COAST AGENTS

Hughson & Merton { San Francisco, 105 Front St. / Portland Ore., 512 McKay Bldg. / Los Angeles.

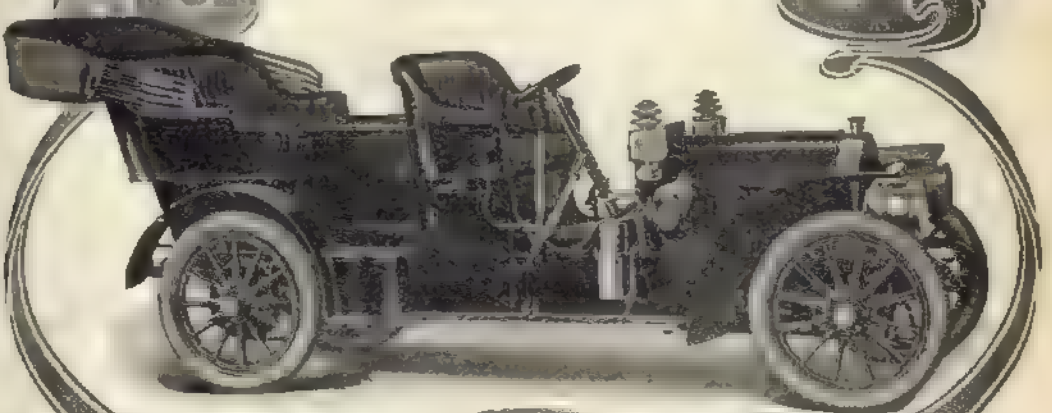
CANADA AGENTS

John Millen & Son { Toronto / Montreal

For Sale by all Leading Jobbers. Get Catalog No. 27 for Prices on Full Line.

Locomobile

The Most Reliable American Car



TYPE I. 40 H.P.
OUR PRINCIPAL MODEL FOR 1908
PRICE $4750
TOP EXTRA

THE Type I Locomobile is a beautiful and powerful 7-passenger Touring Car. In size and general appearance it resembles our Type H 1907 model, but is propelled by a motor of largely increased horsepower and is fitted with 36-inch wheels and tires and with new style radiator of high efficiency and exceedingly attractive appearance. The wheel base is longer and there are numerous other changes and refinements.

Other models from $2,900 up. Our principal closed car for 1908 will be of the Limousine type, most attractive and convenient, $4,200.

MOTOR 4-cylinder water cooled.
CYLINDERS 5 in bore 6 in stroke
IGNITION Magneto break, platinum contacts
MAGNETO: Low tension type.
TRANSMISSION Selective system
(Used on all 1908 Locomobiles
TRANSMISSION BEARINGS: Hess Bright
SPEEDS 4 forward and reverse
WHEEL BASE 123 inches
WHEELS 36 inches diameter
WHEEL BEARINGS, Hess Bright.
TIRES 36x4 front 36x4½ rear
SEATING CAPACITY 7 adults.
GASOLENE CAPACITY 25 gals
OIL CAPACITY 22 pints in all
PRICE $4,750 including all lamps, tool kit, tool bag, tire irons, jack, pump, storm aprons foot rest, horn Top extra

1908 pocket size Catalogue ready. Mailed on application.

The Locomobile Company of America, Bridgeport, Conn.

NEW YORK Broadway and 76th St.
PHILADELPHIA 245 N. Broad St.

Member Association of Licensed Automobile Manufacturers

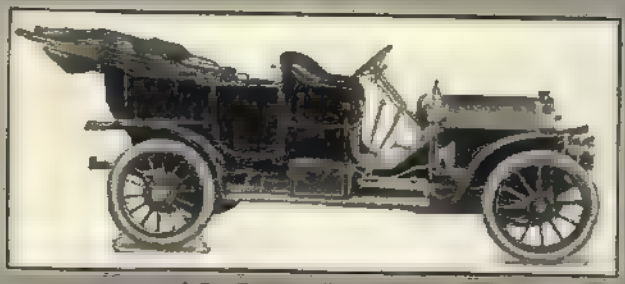
BOSTON 400 Newbury St.
CHICAGO 1354 Michigan Ave.

Stoddard-Dayton

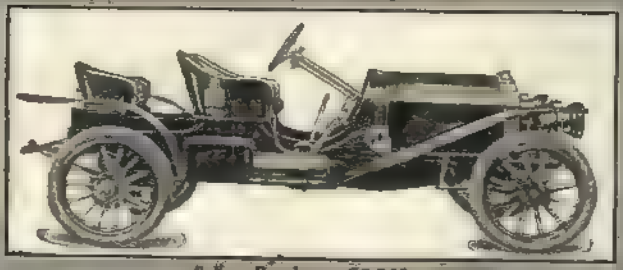
1908 MODELS

8-G. Six-Cylinder, $4,500
Complete Without Top

8-H. Runabout, $1,700
Complete, Without Top

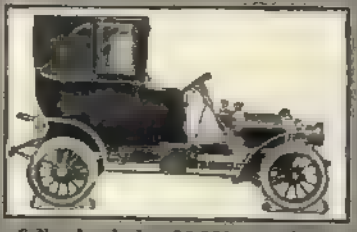


8-F. Touring Car, $2,500
Without Top or Gas Lamps



8-K Roadster, $2,500

8-F. Limousine, $3,750, complete



8-N. Landaulet, $2,500, complete

SEND FOR 1908 CATALOG

The Dayton Motor Car Co. Dayton, Ohio, U.S.A.

Stoddard-Dayton

1908 Stoddard-Dayton 1908 Stoddard-Dayton 1908

Locomobile

THE MOST DEPENDABLE AMERICAN CAR

The New 1908 Type "I" Car 40 H.P.
Four Speeds Selective
36-Inch Wheels 7-Passenger
$4750 - Top Extra
Other Models $2900 Up

The Locomobile Co. of America, Bridgeport, Conn.

The coupe top is finished in broadcloth to match the upholstering. This top can be readily removed when desired and replaced by a full leather top. The front wheels are fitted with 30x3-inch and the rear with 30x4-inch G and J detachable tires.

The motor is the same as in the other model, and the gearing is also the same.

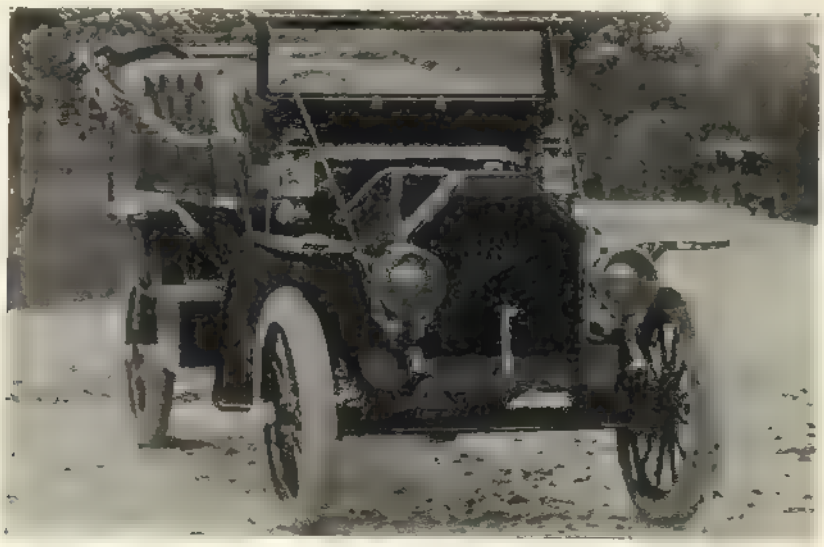
The 1908 Cameron Cars

The announcement is made by the Cameron Car Co., of Brockton, Mass., that two models will be offered for 1908, and altho minor improvements have been made no radical departure from 1907 designs will be shown.

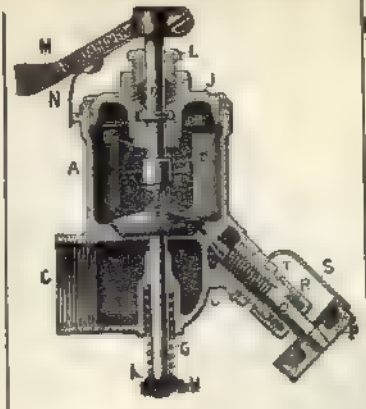
The 1908 Model 8 Cameron. Four-cylinder, air-cooled engine. Rear axle change speed gear of peculiar design (described November, 1906, issue, page 136, gives three speeds forward, all being direct. In coasting with the gears in neutral the rear axle turns free.

Two foot brakes and one electric brake are fitted. The batteries consist of 30 cells 11 P. V. or 11 C. B. National arranged with 10 cells in the front compartment and 20 cell in the rear compartment. Continuous fenders as shown are used on both models. The price with removable coupe top is $1900, with leather top $1700 with both $2000, and without top $1600

Both cars are light weight air-cooled machines of the runabout type, the mechanism of which was described in our November, 1906 issue, page 136.. Model 6 is a two-passenger car, while model 8 herewith shown is provided with a rumble seat. Light weight, a four-cylinder air-cooled engine and a patented rear axle transmission direct on all speeds are the important features



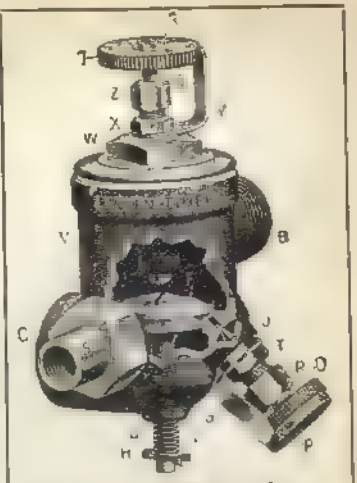
The 1908 Model G Glide Touring Car. This model remains practically unchanged from 1907. The special features are the location of the selective sliding three speed change gear, in a housing just forward of the differential and the use of multiple disk brakes in the rear wheels, each of which gives 400 square inches of braking surface, and there is no adjustment. Rutenber Motor 36 40 H. P. Schebler carburetor, Splitdorf electrical apparatus, and Whitlock radiator are used. The wheel base is 120 inches, tires 34x4 inches, seating capacity seven.



TYPE "A"
with device for regulating outlet supply

HAVE YOU HEARD

of the wonderful results obtained from gasoline engines equipped with



TYPE "B," with device for regulating lift of disc

Lunkenheimer Improved

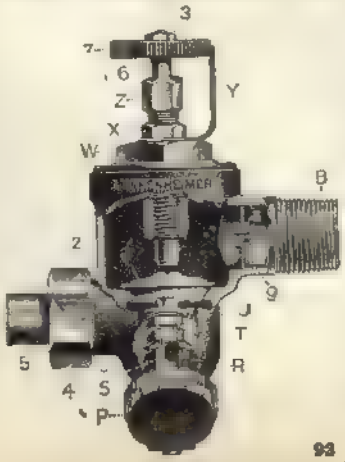
"Nonpareil" Generator Valves?

Gasoline engines that could not be made to work satisfactorily, gave results when equipped with our improved generator valve.

Made in four different styles as shown in illustrations.

If your local dealer cannot furnish them, notify us.

TYPE "C," with devices for regulating outlet supply and lift of disc.



93

THE LUNKENHEIMER CO.

Largest Manufacturers of high grade engineering specialties in the world.

GENERAL OFFICES AND WORKS:

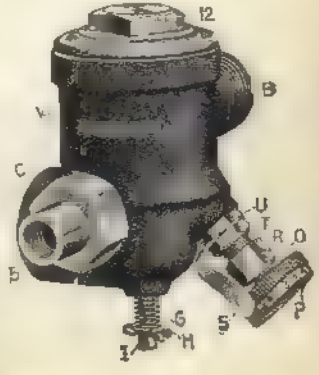
Cincinnati, Ohio, U. S. A.

Branches:

NEW YORK, 66-68 Fulton St.

LONDON, S. E. 35 Great Dover St.

TYPE "D"
Plain Pattern



M. M. 1907

Instant Deliveries

Are what you should be getting at this late date, not promises.

We Are Making Instant Deliveries

To our Agents Hadn't you better place that order you have been keeping your customers waiting weeks for, where you can get

Instant Delivery

Of the best Motor Cycle ever sold, thereby saving your customers further delay and yourself a commission?

M. M., the machine that has more power, strength, stability, speed, endurance and ease of control than any other Motor Cycle built.

Write For Proposition

CHICAGO
WHIPPLE, The Motor Cycle Man
260 West Jackson Blvd.

DENVER
BROWN & BECK, 1737 Champa St.

NEW YORK CITY
GEO. P. JENKINS, 10 W. 60th St.

SAN JOSE, CALIF.
A. C. BANTA & CO., 704 South 2nd St.

AMERICAN MOTOR COMPANY

715 CENTER STREET

Brockton **Mass.**

The "Brown" (English) Motor Cycle

One of the most popular motor cycles across the ocean is the Brown, here illustrated, which is made by Brown Bros., Ltd., Great Eastern street, London, Eng. This machine is made in three types, 2¾ H. P., 3½ H. P., and 5 H. P. The motor crank case is attached to a substantial cradle, strongly bolted to a lug on the front down tube, and the bottom bracket in the rear. The cylinder and head of the motor are integral. Both valves are mechanically operated. The ignition system of the 3½ and 5 H. P. machines includes an accumulator, a make and break type contact breaker and E. I. C. trembler coil, while on the 2¾ H. P. machine a plain coil is used. The Simms-Bosch magneto can be furnisht in place of the accumulator and coil if desired. The carburetor is a genuine Model H. Longuemare. The "Duco-Flex" belt is fitted to all machines.

The manufacturers are desirous of obtaining agents in America, and intend to vigorously push the sale of the machine on this side of the Atlantic as soon as arrangements have been made for appointing agents.

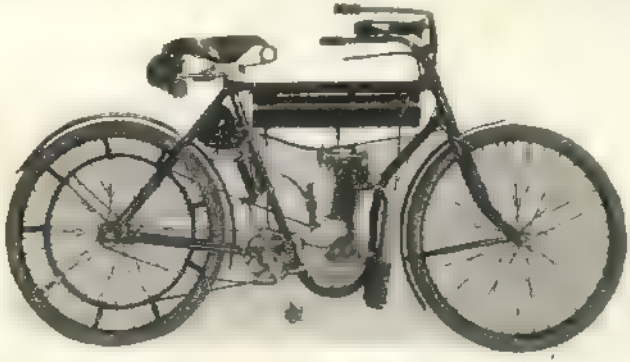
The "Brown" Motor Cycle, one of the leading English machines.

3½ H. P., list price $210; the other 7 H. P., list price $285. This line of machines is the outgrowth of six years' study and experiment on the part of A. J. Hilaman, the designer. His first machine was fitted with a 3 H. P. motor and is still in use to-day.

The Hilaman machines are built for long services, and tho of moderate weight, are strongly put together. Each model is proportioned according to its power and the work it is intended to do.

The 2¼ H. P. motor has a 2¾x3¼ cylinder; 1¼-inch valves; 3 piston rings; ⅝-inch hollow wrist pin, and tool steel shaft running in phospher bronze bearings, ⅜-inch in diameter.

The 3½ H. P. motor has a 3¼x3½ cylinder; 1⅜-inch valves; 3 piston rings; tool steel shaft in bronze bearings, 1x2 inches on the drive side and a 32-lb. flywheel, which is one-half the weight of the engine. The 7 H. P. motor consists of two cylinders of the same size as that of the 3½ H. P. motor and set at an angle of 45 degrees. The flywheel is lighter, and the motor complete weighs only 10 lbs. heavier than the 3½ H. P. motor. The 2-cylinder motor is quite suitable for driving a light runabout.



The Hilaman 2¼ H. P. Motor Cycle. Price $175. Made also in 3½ and 7 H. P. types, listing at $210 and $285 respectively.

Hilaman Motor Cycles

A. J. Hilaman & Co., Moorestown, N. J., have lately entered the market with a line of three high-grade motor cycles, their 2¼ H. P. model, listing at $175, being here illustrated. Two other models are made, one

The 2¼ H. P. machine weighs 135 lbs., the 3½ H. P. 170 lbs. and the 7 H. P. 190 lbs. The wheel bases are, respectively, 52, 56 and 58 inches. The 2¼ H. P. motor is geared 6 to 1, the 3½ H. P. 4 to 1 and the 7 H. P. 2½ to 1.

All these motors are fed by Hilaman vaporizers, manufactured by the same com-

The Season is on—Get Busy—Do it Now

"MANHATTAN" 20-Passenger
Rattan Cross Seat, Price $6000

FOR TRANSPORTATION LINES, PLEASURE RESORTS, HOTEL WORK, ETC.

Practically the only successful gasoline busses in operation are those which we have manufactured. We make them to carry from 10 to 30 passengers. As an evidence of their practicability, both from a service and profit-making standpoint, we draw your attention to the 20 cars which have been operated the last year between New York City and Coney Island. These busses have carried over 300,000 passengers at the rate of $1.00 a head. **Sometimes each one of these busses have made five round trips a day, a total of over 200 miles.** With the exception of tires, the cars are practically in as good condition to-day as when they went into service.

Our passenger coaches have been in use for five years in all parts of the country, also Cuba and Mexico and are paying large dividends to the companies operating them. **MANHATTAN BUSSES** are not an experiment but an assured fact, and have demonstrated their reliability in actual service. They are sure profit makers. Capacity 10 to 30 passengers. Bodies in Rattan or Leather Upholstering in Cane Seats or Leather.

OUR MOTTO—SIMPLICITY STRENGTH DURABILITY and Plenty of Reserve H. P.

MACK BROS. MOTOR CAR CO., Allentown, Pa.

ANNOUNCEMENT

INDESTRUCTIBLE STEEL WHEEL CO.

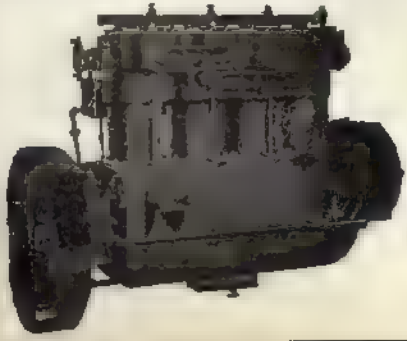
Successors to TURNER & FISH CO.
Manufacturers of All Kinds of

AUTOMOBILE STAMPINGS

Send Drawings and Specifications for Prices

Our STEEL WHEEL Our STANDARD of WORKMANSHIP

Works: LEBANON, IND. — Office and Salesroom: 1208 Michigan Avenue, CHICAGO



Automobile and Truck
MOTORS

16-18 H. P.
24-30 H. P.
45-55 H. P.

HERSCHELL-SPILLMAN CO.
W. Tonawanda, N. Y.

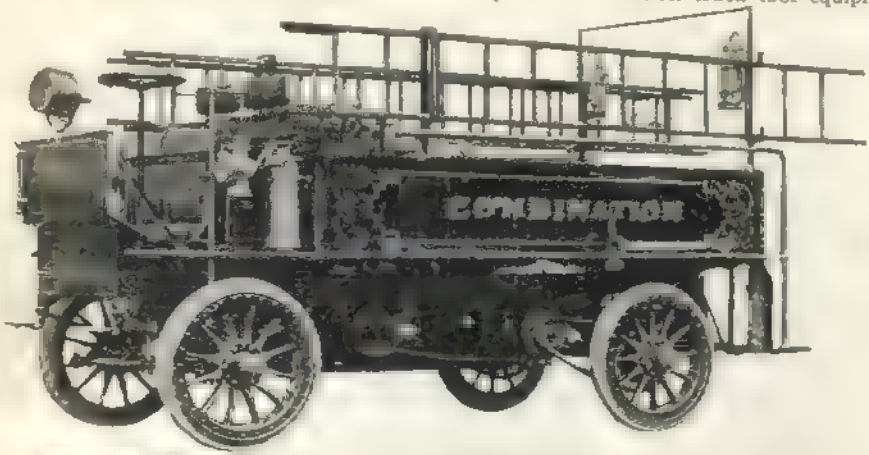
The Knox "Combination" Fire Wagon

HUGH DOLNAR.

This is a duplicate of an order supplied by the Knox Automobile Company, of Springfield, Mass., U. S. A., to the town of Radnor, Pa., which was very recently supplied to the city of Hartford, Conn. The chassis is the Knox Waterless Model D6, and the body and entire construction above the chassis was placed by the C. N. Perkins Company, Lawrence, Mass. The Perkins Company are builders of horse-drawn fire apparatus, and make a specialty of fire extinguishers, ladders and fire wagons and fire department equipments generally.

This Fire Automobile is what is known as a "combination," the equipment consisting of fire axes, fire ladders and fire extinguishers. A third car of about or exactly the same construction was sold by the Perkins Company to the fire department of Newburg, N. Y. same chassis supplied by the Knox Waterless Shops, Springfield.

way as to play one or both at the same time or to refill one while playing the other. To provide a basket of perforated steel containing 200 feet ¾-inch chemical hose with two nozzles of different sizes. To provide also a 12-foot roof ladder on one side of the body and a 20-foot extension ladder on the other side of the body with substanital hangers for same. To provide a foot board on the rear with side and rear hand rails as shown, with space for carrying two 2-gallon hand extinguishers or two acid receptacles. To provide two 3-gallon hand extinguishers, placed one on either side of the body near the front. To provide a box for carrying wrenches and other tools, suitable brackets for carrying two hose nozzles (not furnished) and one plaster-hook, one axe, one crow-bar with suitable brackets, two hand-lanterns for fire purposes with necessary brackets at rear of body, two automobile oil lanterns and one 7-inch Rushmore acetylene gas searchlight and generator; one complete set of Knox truck tool equipment



Combination Fire Wagon supplied to the Hartford Fire Department, Hartford, Conn. Chassis by the Knox Waterless Shops, Springfield, Mass. Body and equipment supplied by the Perkins Company, Lawrence, Mass.

Its complete specifications are: Engine—Two cylinders, opposed, 5x7, air-cooled, 20 H. P. Transmission—Two speeds forward and reverse, planetary type. 100-inch wheel base, tread 56 inches front, 58 inches rear. Tires—34x4, Hartford, Solid Springs—Semi-elliptic, 46 inches rear, 40 inches front. Bearings—Timken roller, front wheels and rear axles. Brakes—Pedal brake on counter shaft, lever brake on both rear wheels. Steer—Hercules wheel. Speed—15 miles per hour. Body—10½ feet long, 56 inches wide inside, 18½ inches high inside. Carrying capacity for 1000 feet 2½ inch standard hose (not furnisht). Equipment—One pair of 25-gallon chemical engines made of the best Lake Superior copper of standard make, with Holloway pattern top. The chemical tank to be placed lengthwise in front end of body, each side and 24 inches apart, allowing unobstructed access to the automobile engine beneath at all times without disturbing the fire equipment. Chemical engines or tanks are piped in such a

This is the third machine of this kind supplied by the Knox Waterless Company, the enthusiastic approval of the first, supplied to the Radnor (Pa.) Fire Department, having led to the placing of the Newburg, N. Y., and Hartford, Conn., orders.

There is every reason for the use of mechanical traction in fire department equipment, and the Hartford Fire Department, purchaser of the fine combination wagon here shown, was one of the first, if not the very first, in the United States, to make satisfactory and continued use of self-propelled steam fire engines.

The Knox chassis is giving great satisfaction in fire department service, being always ready to go out of the door as soon as the alarm sounds, and making much faster time to the fire than horse-drawn wagons can. The appearance of this fine piece of fire fighting apparatus excites the pride of the force that has it, and the price is reasonable. Weight 4000 pounds. Price $4000.

Announcing The **Marmon** *1908 Models*

Air-Cooled and Water-Cooled

We offer this season two strikingly beautiful models.

We offer, with increased confidence, the latest improved Marmon Air-Cooled Motor, which for many years has proven beyond question its thorough efficiency under all conditions of hard service

One of the new features of this remarkable motor which will appeal to the expert is the Marmon One-Piece Detachable Cylinder Head, removed or replaced in a moment, dispensing with valve cages entirely, reducing engine noise to a minimum, and making the valves, pistons and cylinder walls instantly accessible.

To those who prefer water-cooling, we offer the Marmon Water-Cooled Motor of marked excellence, unusually simple, accessible and durable.

Both the air-cooled and Water-Cooled types carry the complete guaranty of this House.

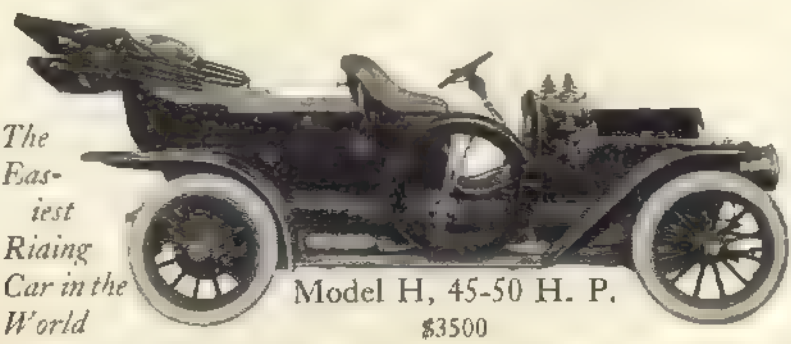
Marmon Touring Cars are much longer and roomier this year. The body hangs low and is designed in a graceful straight-line effect.

All models embody those exclusive features which have won The Marmon its fame for mechanical superiority, such as Double Three-Point Suspension, Marmon Lubrication, Roller Bearing Steering Column, Marmon Multiple Disc Clutch with Cork Inserts, and Marmon Selective Transmission.

Model G, Touring Car, 35-40 H. P., $3000. Model H, Touring Car, 45-50 H. P., $3500; Model H, Runabout, 45-50 H. P., $3500.

A full description of all models will be furnished promptly on request of Dept. 15.

The Easiest Riaing Car in the World



Model H, 45-50 H. P.
$3500

Built by one of the World's Best Known Engineering Houses

The Marmon account for 1908 offers a very attractive proposition. We have some open territory for first class agents.

Nordyke & Marmon Co.

(Estab. 1851) Indianapolis, Ind.

Member Am. Motor Car Mfrs. Assn.

THE MARMON

"A Mechanical Masterpiece"

Model "F," $3,500: Model "C-7," $2,500.

Takes the Jolts Out of Rough Roads

The luxury of motion in a Marmon when running at good speed over rough roads is totally unknown in any other car.

The principle of Double Three-Point Suspension (patented) makes the running gear flexible, allowing the wheels to drop into ruts and run over bumps without jolting the passengers, without pounding the tires and without straining the mechanism.

The Easiest Riding Car in the World

Perfect Score— Glidden Tour

Unrivaled lubrication, solid cast aluminum body, roller bearing steering column, and a score of other striking features. Send for catalog. Address Dept. 16.

Nordyke & Marmon Co. (Estab. 1851) **Indianapolis, Ind.**

Member Am. Motor Car Mfrs' Assn.

I Will Prove to You

That

SULLIVANOIL

Is The Best Cylinder Oil

ONE GALLON FREE!

I have found that when a person begins to investigate any question, he generally arrives at the conclusion that a little knowledge of which has a great deal of theory connected with it is worth

The subject is a theoretical one, acting, difficult to fix properly, and even seemingly unreasonable orders can't alter this fact, as experience shows.

The oil or extract used in the cylinder must be used so they can all the cylinders, and even if not a result of theory, for it has enough body to lubricate properly.

There is practically as much resistance (carbon from burning of) on the best cylinder oil as on the regular cylinder oil sold in the market.

Now, after years of experimenting, I have discovered an oil of just the proper density which lubricates any internal combustion cylinder perfectly and leaves no carbon. There is no residue left. The proper density of Sullivanoil is pre-eminently the best of all cylinder oils.

Sullivanoil is of the proper consistency, and you do not have to buy three or four grades to experiment with to find the one grade that is best for your motor.

In Sullivanoil I have a lubricant that has proven successful in all standard makes of cars.

Sullivanoil is of one grade—the proper density—the right "body" has proven satisfactory in every case.

Talk—promises—arguments are all right in their places but

I will prove to you by actual demonstration that Sullivanoil is really what I say—"the best cylinder oil for your motor."

I will do it entirely at my expense

ONE GALLON FREE!

I will give you one gallon can of Sullivanoil free and prepay delivery charges—no obligation whatever to you—to try on your car.

Simply tell me (on your own or automobile stationery) the name of your dealer and I will have him supply you with one gallon of Sullivanoil free of charges. Send for booklet—"How to Test Oil"—which gives many facts about oil that you should know.

Write to me personally

O. L. Sullivan

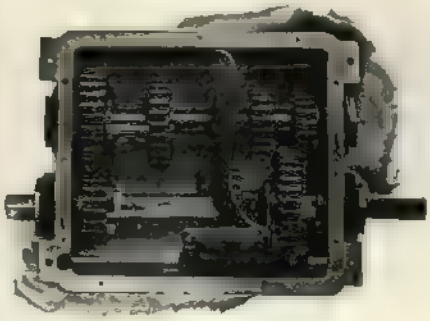
MAKER OF

SULLIVANOIL

50 Wells St. - - Chicago

BROWN-LIPE GEARS

Differentials for chain and shaft drive
Back lock steering Sliding gear transmissions



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THOMAS J. WETZEL, 29 West 42nd St., New York City } Direct Factory Salesmen

CHAS. E. MILLER, 97 Reade St., New York,
318-320 N Broad St., Philadelphia,
202-4 Columbus, Ave., Boston,
406 Erie St., Cleveland, Ohio } Sales Agent, Carrying Stock.

POST & LESTER CO., Hartford, Conn., Eastern Sales Agents

BROWN-LIPE GEAR COMPANY, 206 S. Geddes St., Syracuse, N. Y.

If you want to give an elegant finish to your car, use

Leather Fenders

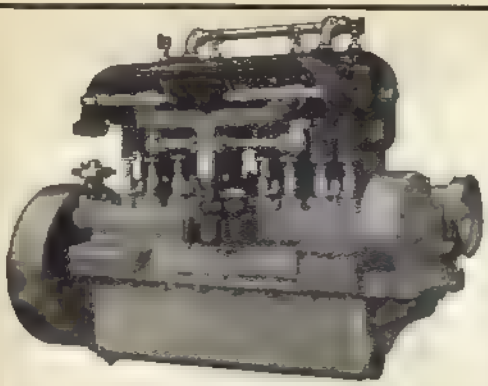
They are far superior to wood or metal fenders, being more durable, neater and handsomer in appearance.

They are the only equipment for a hige-grade car.

Insist on having yours fitted with LEATHER FENDERS.

We fill orders for leather license tags promptly.

McKinnon Dash Company
BUFFALO, N. Y.



"CONTINENTAL MOTORS"

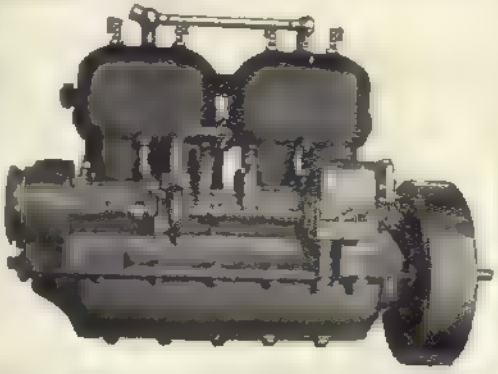
ARE STANDARD

"Continental" motors command consideration in preparing specifications for high grade cars. They are correct in design, handsome in appearance and efficient and economical in operation. We are in position to furnish motors unequaled on the American market, in any quantity desired and with guaranteed deliveries.

Our new plant is equipped with modern machinery for accurate workmanship and is devoted entirely to manufacturing high grade motors. Cut shows our 4¾ in. x 5 in. 4-cylinder motor which is furnished with self-contained lubricating system or with plain oil pan, as ordered. Also furnished ready for attaching and coupling magneto.

All motors are tested at our plant under full load and delivered ready for service. Our product is the result of years of experiment and its refinements in details meet with the approval of discriminating purchasers. All parts are made absolutely interchangeable.

We are ready to contract in quantities for season of 1908. Deliveries guaranteed. Printed matter and details upon request.



CONTINENTAL MOTOR MFG. CO.

Muskegon, Mich.

K. FRANKLIN PETERSON, Factory Representative, 166 Lake St., Chicago, Ill.

THE MARMON

"A Mechanical Masterpiece"

Model "F," $3,500: Model "O-7," $2,600.

Takes the Jolts Out of Rough Roads

The luxury of motion in a Marmon when running at good speed over rough roads is totally unknown in any other car.

The principle of Double Three-Point Suspension (patented) makes the running gear flexible, allowing the wheels to drop into ruts and run over bumps without jolting the passengers, without pounding the tires and without straining the mechanism.

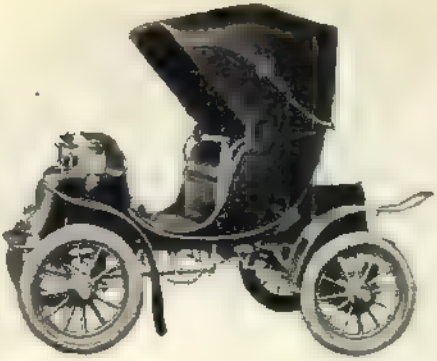
The Easiest Riding Car in the World

Perfect Score—Glidden Tour

Unrivaled lubrication, solid cast aluminum body, roller bearing steering column, and a score of other striking features. Send for catalog. Address Dept. 16.

Nordyke & Marmon Co. (Estab. 1851) **Indianapolis, Ind.**

Member Am. Motor Car Mfrs' Assn.



BAKER ELECTRICS

The success of an automobile depends more upon the continued satisfaction afforded its users than upon the performance of special stunts.

BAKER ELECTRICS are built for service and that they furnish it in full measure is demonstrated by the fact that Baker owners are invariably Baker enthusiasts.

BAKER ELECTRICS perform some stunts too. On May 23rd, a Baker Victoria which had been in constant use for over four months was run over Cleveland streets and boulevards, hilly and level, rough and smooth, paved and dirt roads, a distance of 101.6 miles *on one charge of the battery.*

A Baker, entered in the electric class at the Cleveland Hill Climb on June 15th, had no competitors, but to show what it could do, was sent up the hill in 1:41, beating the time of fifteen high-powered gasoline cars.

Whether used for daily service or as a car with which to perform unusual feats, no electric in the market will surpass the Baker at any point.

The
Baker Motor Vehicle Co.
18-80th Street, N. W.
CLEVELAND, OHIO

The "Breech-Block" Plug

"I have been using your plugs for the past six months. They are the finest I have ever used."

Barney Oldfield

Soot-proof to the melt.
Unaffected by oil
Chambered and protects porcelain.
Keeps porcelain fragments from cylinder.
Slightest platinum movement cleans points.
Makes starting easy—fires first charge.
Big cars run slow on high gear
Closely throttled—not a skip
Costs a little more than other plugs
Worth three and more
Write for booklet

"Four Breech-Blocks can be opened, cleaned and closed in sixteen seconds."

Patented in England, France and Germany, 6 patents pending in U. S. and Europe.

THE STANDARD COMPANY
TORRINGTON
CONN.

THE MARMON

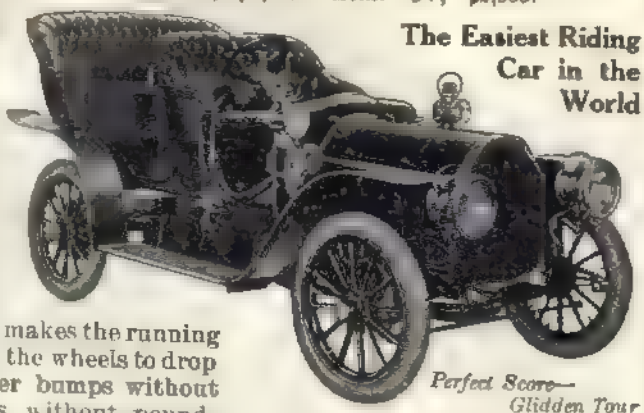
"A Mechanical Masterpiece"

Model "F," $5,500: Model "O-7," $3,500.

Takes the Jolts Out of Rough Roads

The luxury of motion in a Marmon when running at good speed over rough roads is totally unknown in any other car.

The principle of Double Three-Point Suspension (patented) makes the running gear flexible, allowing the wheels to drop into ruts and run over bumps without jolting the passengers, without pounding the tires and without straining the mechanism.



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Member Am. Motor Car Mfrs' Assn.

I Will Prove to You

That

SULLIVANOIL

Is The Best Cylinder Oil

ONE GALLON FREE!

I have found that when a person begins to investigate the question he generally arrives at the conclusion that a cylinder oil is a cylinder oil, and there is a great deal of truth in this statement.

This statement is true. A dense heavy oil is slow acting, doesn't feed properly, and even mechanical oilers cannot deliver it in proper quantities at all times.

The Lubricator and Cylinder must be used so freely with thin oils, the cylinders, and even the pistons are so hot as to carry off the heavy body to enable the proper feed.

There is practically as much residue (carbon) from the one as from the other of the regular cylinder lubricating oils on the market.

Now, after years of experimenting, I have discovered an oil of just the proper density which generates a minimum of carbon or deposit, and leaves no residue. There is no residue with other combustion. The particular deposit or "body" in Sullivanoil is one reason why Sullivanoil is pre-eminently the best of all cylinder oils.

Sullivanoil is not a grade or quality and you do not have to buy three or four grades to get mixed with it the one grade that is best for your motor.

Sullivanoil is the cylinder oil that has proven successful on all standard makes of cars.

Sullivanoil of one grade, the proper density—the right "body"—has proven satisfactory in every case.

Talk, promises—arguments are all right in their places but

I will prove to you by actual demonstration, that Sullivanoil is all, what I say—the best cylinder oil for your motor.

I will do it entirely at my expense.

ONE GALLON FREE!

I will give you one gallon can of Sullivanoil free—no delivery charges—no obligation whatever to you—to try on your car.

Simply tell me that you own an automobile and send me the name of your dealer and I will have one delivered to you, exclusive of Sullivanoil free, of charges. Send for booklet "How to Test Oil," which gives many facts about oil that you should know.

Write to me personally.

O. L. Sullivan

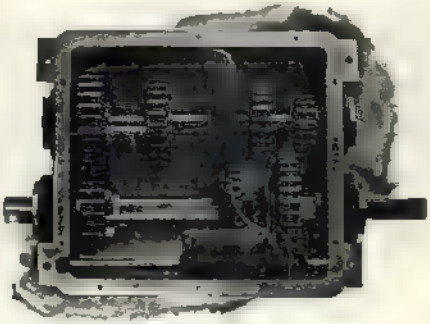
MAKER OF

SULLIVANOIL

50 Wells St. - - Chicago

BROWN-LIPE GEARS

Differentials for chain and shaft drive
Back lock steering Sliding gear transmissions



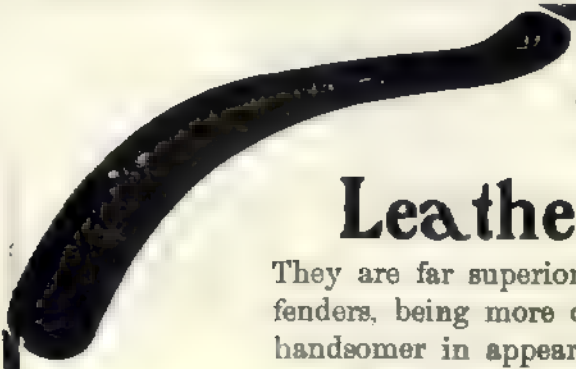
Catalogue and Illustrated Price List

E. FRANKLIN PETERSON, 144 Lake St., Chicago
THOMAS J. WETZEL, 29 West 42nd St., New York City } Direct Factory Salesmen

CHAS. S. MILLER, 97 Reade St., New York,
318-320 N. Broad St., Philadelphia,
202-4 Columbus, Ave., Boston,
486 Erie St., Cleveland, Ohio } Sales Agent, Carrying Stock.

POST & LESTER CO., Hartford, Conn., Eastern Sales Agents

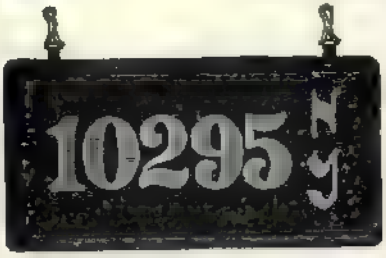
BROWN-LIPE GEAR COMPANY, 206 S. Geddes St., Syracuse, N. Y.



If you want to give an elegant finish to your car, use

Leather Fenders

They are far superior to wood or metal fenders, being more durable, neater and handsomer in appearance.

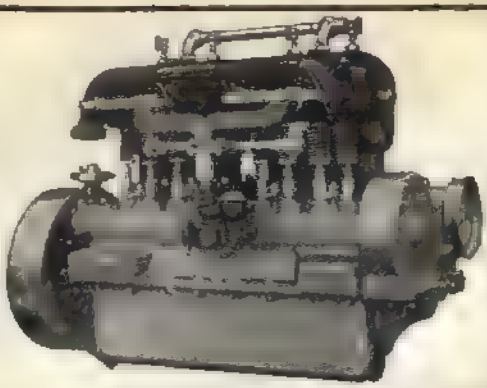


They are the only equipment for a hige-grade car.

Insist on having yours fitted with LEATHER FENDERS.

We fill orders for leather license tags promptly.

McKinnon Dash Company
BUFFALO, N. Y.



"CONTINENTAL MOTORS"

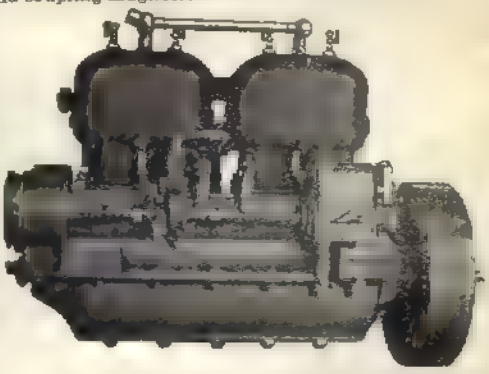
ARE STANDARD

"Continental" motors command consideration in preparing specifications for high grade cars. They are correct in design, handsome in appearance and efficient and economical in operation. We are in position to furnish motors unequaled on the American market, in any quantity desired and with guaranteed deliveries.

Our new plant is equipped with modern machinery for accurate workmanship and is devoted entirely to manufacturing high grade motors. Cut shows our 4½ in. x 5 in. 6-cylinder motor which is furnished with self-contained lubricating system or with plain oil pan, as ordered. Also furnished ready for attaching and coupling magneto.

All motors are tested at our plant under full load and delivered ready for service. Our product is the result of years of experiment and its refinements in details meet with the approval of discriminating purchasers. All parts are made absolutely interchangeable.

We are ready to contract in quantities for season of 1908. Deliveries guaranteed. Printed matter and details upon request.



CONTINENTAL MOTOR MFG. CO.

Muskegon, Mich.

K. FRANKLIN PETERSON, Factory Representative, 166 Lake St., Chicago, Ill.

THE MARMON

"A Mechanical Masterpiece"

Model "F," $3,500: Model "C-Y," $2,500.

Takes the Jolts Out of Rough Roads

The luxury of motion in a Marmon when running at good speed over rough roads is totally unknown in any other car.

The principle of Double Three-Point Suspension (patented) makes the running gear flexible, allowing the wheels to drop into ruts and run over bumps without jolting the passengers, without pounding the tires and without straining the mechanism.

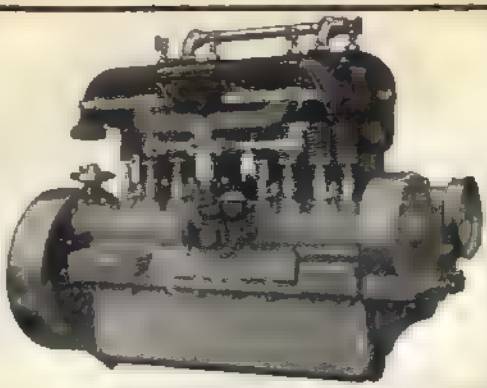
The Easiest Riding Car in the World

Perfect Score—Glidden Tour

Unrivaled lubrication, solid cast aluminum body, roller bearing steering column, and a score of other striking features. Send for catalog. Address Dept. 15.

Nordyke & Marmon Co. (Estab. 1851) **Indianapolis, Ind.**

Member Am. Motor Car Mfrs. Assn.



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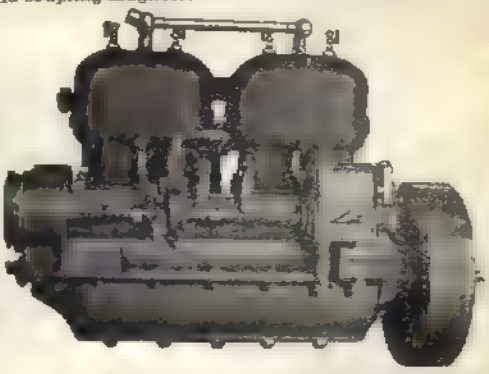

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Nordyke & Marmon Co. (Estab. 1851) **Indianapolis, Ind.**

Member Am. Motor Car Mfrs. Assn.

THE MARMON

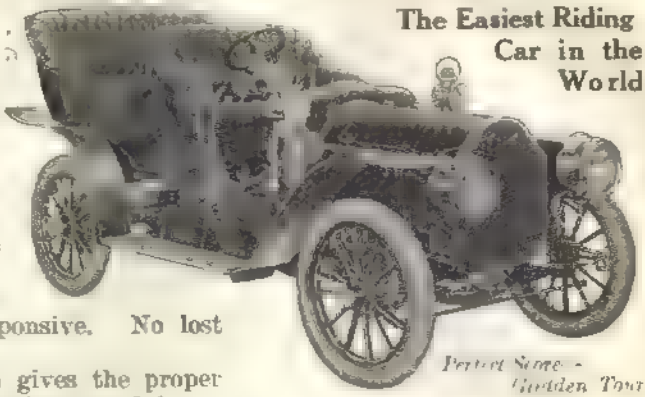
"A Mechanical Masterpiece"

Model "F," $3,500: Model "C-7," $2,500

Another Feature—The Steering Gear.

The Marmon steering column is mounted on adjustable roller bearings throughout. The wheel turns easily and the steering control is instantly responsive. No lost motion.

This construction gives the proper strength without clumsiness, and is an important factor in safety. The best steering gear yet introduced.



Perfect Semi-Garden Tour

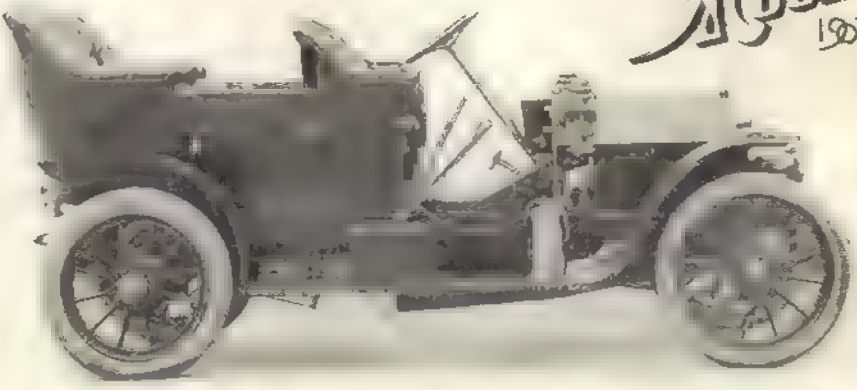
The Easiest Riding Car in the World

There are many other distinctive Marmon features that you ought to know. Send for catalog. Address Dept. 15.

Nordyke & Marmon Co. (Estab. 1851) **Indianapolis Ind.**

Member Am. Motor Car Mfrs' Assn

The Most Up-to-Date Car in America



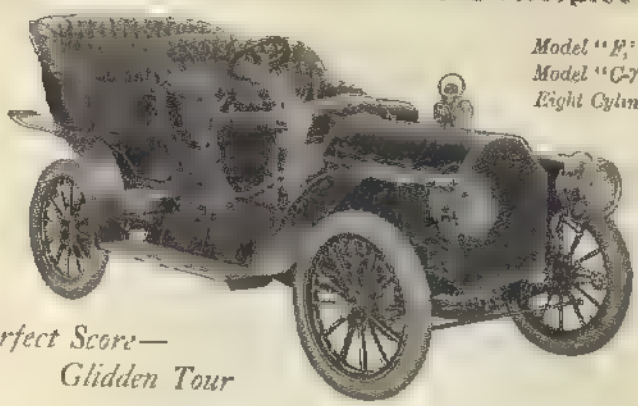
MODEL C—30-35 H. P.—$3500

Designed throughout by America's Peerless designer, Mr. L. P. Mooers, the man who made it possible for Barney Oldfield to secure and still hold all world's circular track record from 1-50 miles with his Green Dragon. Multiple disc clutch, Drop Frame, Four speeds forward and Reverse, Full elliptic Rear Springs, Genuine Honeycomb Cooler.

MOON MOTOR CAR CO., St. Louis, Mo.

THE MARMON

"A Mechanical Masterpiece"



Model "F," $3,500
Model "C-7," $2,500
Eight Cylinder, $6 000

The Easiest Riding Car in the world.

Perfect Score—
Glidden Tour

Marmon Coolability

The fact that a motor is water-cooled or air-cooled does not of itself signify that it will keep cool or that it will overheat.

Some motors, no matter what cooling principle is employed, overheat, lose power and stick

Many things enter into the cooling problem the construction of the motor, its valves, its oiling system, radiating system, etc.

The fact that concerns you about Marmon Air-Cooling is this: It is more economical, more convenient, and more *efficient* under continuous hard driving than any other system of cooling

Theorizing to the contrary is just so much vapor. The facts are plain

We know—and so does every Marmon owner—that Marmon Air Cooling *always* delivers the goods. Otherwise we'd be building some other type of engine.

The Marmon is a car of many features—flexible running gear, the best oiling system, the best transmission, Chrome Nickel Steel construction, solid cast aluminum body. Built entirely in our plant.

Write for catalog. Address Dept. 15

Nordyke & Marmon Co., (Estab. 1851) Indianapolis, Ind.

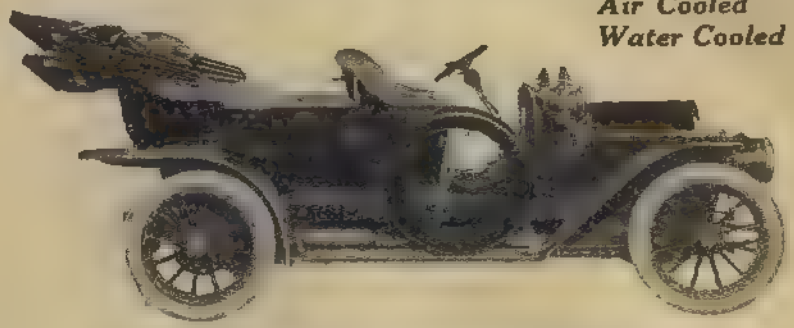
Member Am. Motor Car Mfrs. Assn.

THE MARMON

"A Mechanical Masterpiece"

The Easiest Riding Car in the World

Air Cooled
Water Cooled



YOU may think you know what it is to ride comfortably in a motor car.

But until you experience the easy, gentle motion of a Marmon over rough roads, you simply do not know what automobile comfort is.

This is just one feature of the exclusive mechanical excellence of the Marmon Car. It offers all that any other high-grade car offers, plus a number of distinct advantages.

The Marmon account for 1908 offers a very attractive proposition. We have some open territory for first-class agents.

Model H. Touring Car, 40-45 H. P., $3500; Model H. Roadster, 40-45 H. P., $3500; Model G. Touring Car, 35-40 H. P. $3000.

For complete description of all models, address Department 15.

Nordyke & Marmon Co.

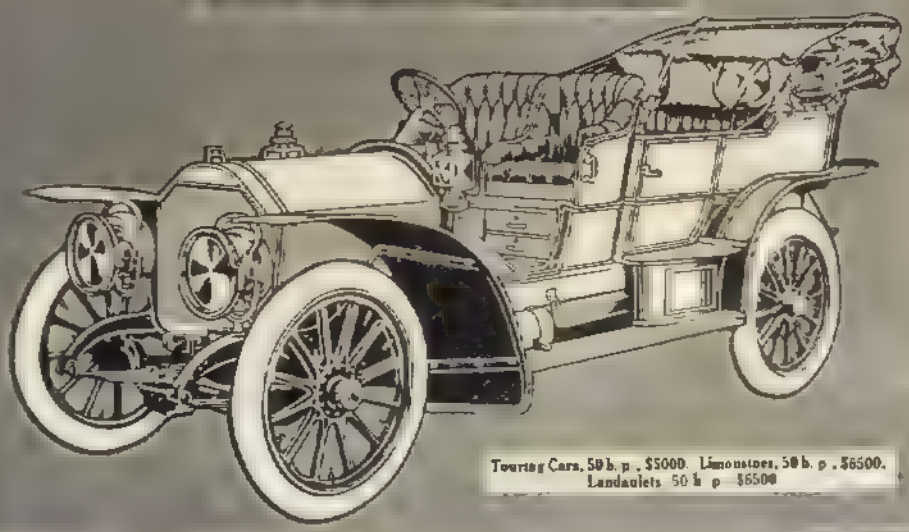
(*Established 1851*) INDIANAPOLIS, IND.

Coliseum Show, Chicago

LICENSED UNDER SELDEN PATENT

Matheson

GUARANTEED ONE YEAR



Touring Cars, 50 h. p., $5000. Limousines, 50 h. p., $6500. Landaulets, 50 h. p., $6500

The Matheson is standardized. The few changes for 1908 are unimportant refinements. As a matter of fact, most of these were incorporated in mid-season, in our '07 cars. This is the Matheson policy. We do not "save up" new features till the beginning of a new selling season. We neither expect nor desire Matheson owners to buy a new car every year, nor every other year.

We are building today 1908, 1909, 1910, 1912 Mathesons and he who invests will have, years hence, a car which will, after the hardest use, be running as strongly, as reliably, giving as efficient and as economical road service as any high class car then offered for sale. A 1906 Matheson stock touring car still holds the world's record for having carried seven passengers a mile in 50 1-5 seconds. Most cars are bought; Matheson cars are invested in.

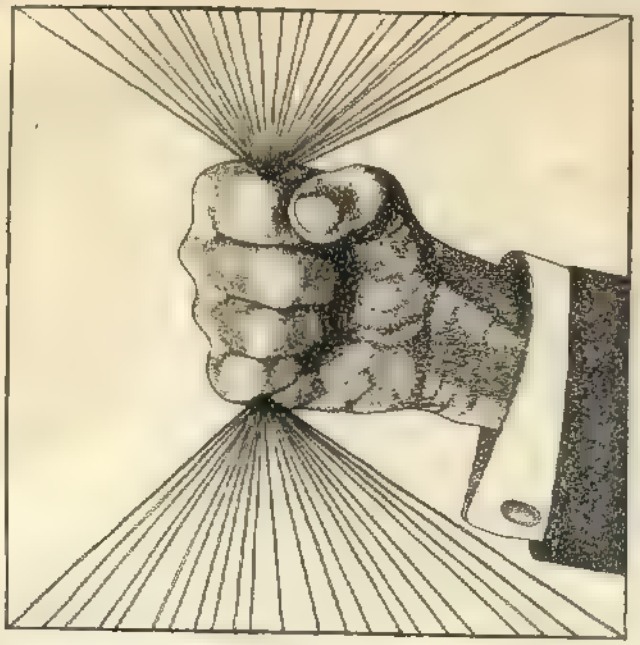
The salient Matheson features are those of the greatest foreign cars. The Matheson differs from these in one important respect, it sells [illegible] its new speed records, but Lansing records cover not records, its perfect seven [illegible] tests made not one without need of repair, but with every adjustment [illegible] proven to us that there is no room for improvement in the Matheson. We have sought in vain for [illegible] performance that would direct the improvement in any feature. Feature for feature through the world's output of high powered cars, not excepting the best of foreign makes, there is nothing that can compare with the Matheson for performance over American roads.

Write for our new booklet, "I Drove My Matheson," by Matheson owners, some of whom have made thousands of miles without even an adjustment, some of whom have gone through an entire season with a repair bill of nearly five cents. Better still, visit our exhibit, Space No 25, in the gallery at the Madison Square Garden Show. The Matheson sets a standard by which you may judge other high powered cars

PALMER & SINGER MFG. CO.

Formerly Matheson Co. of New York

1619 Broadway, New York



THEORY OF MANGIN MIRROR

¶ The primary purpose of searchlights is to concentrate light. To concentrate light it is necessary to change the direction of the rays of light. This change of direction may be accomplished in three ways:
1 By reflection (ordinary mirror).
2 By refraction (ordinary lens).
3 By reflection and refraction (Mangin Lens Mirror).

JUST imagine the light rays as so many threads of silk that are projecting themselves out into space at various angles, groundward and heavenward. Now, imagine that you should with your hand gather all these threads of silk up into a single strand and you have the layman's explanation of what happens, in a scientific way, with the rays of light which are condensed by the reflection and refraction of the

Bausch & Lomb Searchlight Mirror

¶ In other words, all the tiny rays of light which are wasted and reflected in all directions are gathered together in a solid beam and concentrated within the area which it is required to illuminate—the roadway.

¶ There is no lost energy. The tiny ray of light that in itself would have been of no value is joined with thousands of others, which united form a powerful beam.

¶ Exhaustive tests prove that with a stated candle power, a lamp fitted with the Bausch & Lomb Mangin Lens Mirror will give more than 50 per cent. greater illumination than inferior substitutes.

¶ Every mirror has B. & L. stamped on the face.

¶ "PRISM" IS A LITTLE MAGAZINE we publish monthly. Not a mere advertisement, but a beautifully made and printed little publication about that world of wonder and beauty seen by the lens. Send us your name and we will enter your subscription FREE.

Bausch & Lomb Optical Company, Rochester, N. Y.
New York Boston Washington Chicago San Francisco

Matheson

Last year, at the Race Meet on Ventnor Beach, Atlantic City, a Matheson car containing seven passengers and driven by the late Tom Cooper made a mile in 50 seconds which established a new world's record for stock cars. At the end of the recent Atlantic City Automobile Carnival and Race Meet, with all the entries striving to lower these figures, this wonderful record still stands unbeaten by any car carrying more than one passenger.

Terrific speed, mighty power, freedom from repairs, no need of adjustments, perfect flexibility, serviceability, reliability, endurance, beauty, comfort, luxury—the Matheson has all these things to the full; we cannot add a feature, a detail, to make it a better car; it's best.

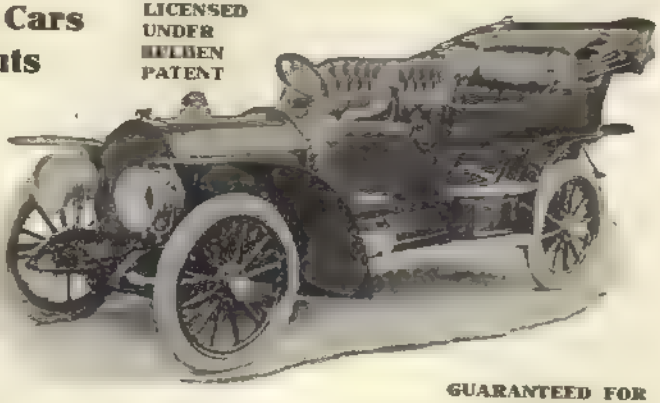
IMMEDIATE DELIVERIES

Touring Cars
Runabouts

35 H. P.
$4,500

50 H. P.
$5,500

LICENSED UNDER SELDEN PATENT



GUARANTEED FOR ONE YEAR

REPRESENTED IN

Albany N.Y.—Albany Garage Co. 28-30 Howard St.
Baltimore, Md.—The Matheson Co. of Maryland, R. E. Wood Lumber Co.
Binghamton, N. Y.—H. D. Clinton Auto Co.
Boston, Mass.—The Matheson Co., of Boston 92 Massachusetts Ave.
Chicago, Ill.—The Matheson Co. of New York Western Agency 1441 Michigan Ave.
Cleveland, Ohio—Central Auto & Supply Co. 2169 Ninth St. S. F. F. Schellentrager.
Canada—A. S. Leonhart Calgary Alberta Canada
Davenport Iowa—P. C. Pearson
Jersey City N. J.—Hudson County Auto Co., 2595 Boulevard
Ligonier Ind.—Straus Bros. & Co.
Long Branch N. J.—Long Branch Auto Co.
Los Angeles, Cal.—James Motley 2... S. Spring St.
Newark, N. J.—The Matheson Co. of New Jersey, 9 Clinton St.
Passaic, N. J.—The Matheson Co. of New Jersey, 157-15 Main Ave.
Philadelphia, Pa.—Titman, Leeds & Co., Broad and Cherry Sts.
Pittsburg, Pa.—E. J. Schellentrager, 41 Leader Building.
Portland, Ore.—H. L. Keats Auto Co., 8-82 4th St.
Richmond, Va.—Motor Transfer Co.
Rochester N. Y.—Rochester Automobile Co., 150-170 South Ave.
St. Louis, Mo.—South Side Auto Co., 2339 South Grand Ave.
Salt Lake City, Utah—Savage & White
San Francisco, Cal.—The Matheson Co., 442 Golden Gate Ave.
Watertown N. Y.—Watertown Automobile and Supply Co.
Wilkes-Barre, Pa.—Matheson Motor Car Co.

THE MATHESON COMPANY of New York, 1619-21-23 Broadway

1908
KISSEL KAR

SPECIFICATIONS

Motor—4-cylinder vertical, cylinders cast in pairs.

Cylinders—4 ⅛x4¾, 35-horsepower.

Transmission—Sliding gear type, selective system, three speeds forward and one reverse Timken adjustable roller bearings. Driving shaft on top.

Rear Axle—Clutch driven floating type. Timken roller bearings throughout.

Front Axle—Drop forged, I-beam, Timken roller bearings.

Frame—Straight pressed steel, 107″ wheel base.

Springs—Front 36″, rear 52″.

Lubrication—Kinwood mechanical oiler, positively driven.

Driving Shaft—Large bevel gears and bevel gear differential.

Ignition—One 6-volt 60-ampere storage battery and one set of dry cells.

Brakes—Internal and external double acting on the rear wheel hubs

Wheels—34″ with quick detachable rims.

Tires—4″ rear, 3½″ front unless otherwise specified.

Tread—56″.

Body—Straight line.

Seating Capacity—Five persons.

Carburetor—Schebler.

Radiator—Tubular with fan.

Weight—2350 pounds.

Equipment—Two side lamps, set of tools, Horn and tail lamp. Also brackets for acetylene lamps

Price—$2000 00 F. O. B. Hartford.

The best value in the world. If you are looking for the leading car for next season, write to us for further particulars, or call upon our representatives.

Compare specifications with any $2500 or $3000 car

THE KISSEL MOTOR CAR CO.
HARTFORD, WIS.

DISTRIBUTORS

WEBB JAY MOTOR CAR CO., Chicago, Ill., Chicago and Central territory.

J. H. McDUFFEE, Watrous, New Mexico, territory west of the Rocky Mountains.

MAXFIELD & RICE BROS., Minneapolis, Minn., Minneapolis and Northwestern territory.

MATHESON

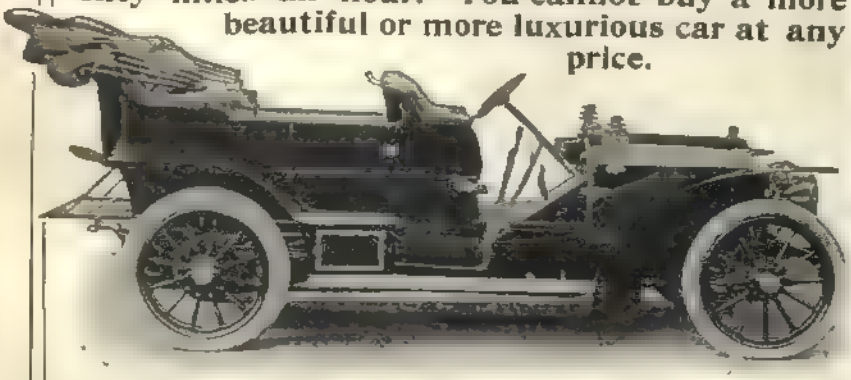
The Standard American Car.

THE Matheson is more than a pleasure giver---it's an investment.

Subject the Matheson to the hardest kind of use, under the most severe conditions, and it will rarely if ever need repair, and seldom if ever need adjustment.

A car that can establish, as did the Matheson, a new mid-winter record to Boston, over the worst roads of the year, and do it easily, without the necessity of a single repair or adjustment, is the greatest SERVICE car you can buy.

The Matheson will carry seven passengers seventy miles an hour. You cannot buy a more beautiful or more luxurious car at any price.



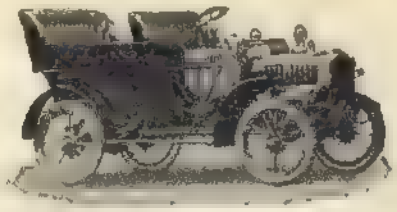
TOURING CARS, RUNABOUTS

Licensed Under Selden Patent.

35 H. P., $4,500 **50 H. P., $5,500**

The Matheson Company of New York

1619-21-23 Broadway



20 H. P. Touring Car, $1250

All my talking about the "Maxwell" is only the whisper of a breeze when compared with the whirlwind way the "Maxwell" talks for itself in actual performance.

Ever since the "Maxwell" was first designed by Mr. J. D. Maxwell, the best automobile designer in America, and was put on the market, it has been speaking for itself by its deeds.

The "Maxwell" won endurance contest after contest, mountain climb after climb, won the Deming Trophy in the Glidden Tour, of 1906, then won the world's 3000-mile non-stop record—which it still holds, and so pursued its triumphal march of victory right up to its recent sweeping of the field at Wilkes Barre and Bridgeport hill climbs, and its coming out with a perfect score in the famous "Sealed Bonnet" Contest.

These are the things that prove the work of

The "Maxwell"

to you—to the man who wants an all around, general, always-to-be-depended-upon-utility.

The "Maxwell" is never known to fail its owners—over 7,000 delighted "Maxwell" owners throughout America will gladly testify to this.

Complete literature telling of all the splendid details of construction which have made these feats of endurance possible, will be mailed you free if you will address Dept. 7. Also, if you will address me personally, I shall be glad to send you a personal letter of introduction to the "Maxwell" dealer nearest you.

Tell him to give you a ride in the "Maxwell" over the toughest piece of country that you know—that will show you.

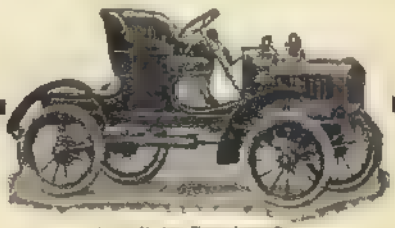
Benj. Briscoe

President, Maxwell-Briscoe Motor Co.
Members A. M. C. M. A.

55 Duane Street, Tarrytown, N. Y.

Main Plant: Tarrytown, N. Y. **Factories: Chicago, Ill., Pawtucket, R. I.**

Dealers in all large cities.



20 H. P. Tonneau $1250

Watch for This Radiator

when you are looking at passing automobiles.

It is the radiator on the "Maxwell."

Notice how perfectly the cars back of this radiator run.

The "Maxwell" is giving perfect satisfaction to over 7,000 owners.

The "Maxwell" was *designed right* to start with—by Mr. J. D. Maxwell—and is *built right* throughout—that's why.

The "Maxwell"

is not a luxury, but a necessity. Its utility is proven by the way it has won endurance contests and touring car prizes, won the Dewar Trophy in the Gladden Tour (1,000 miles), and the world's 24,000 mile non-stop record.

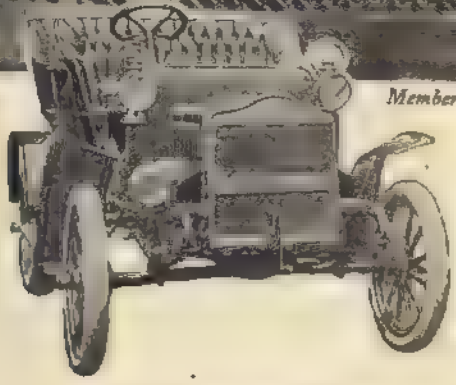
Address Dept. 7 for the complete "Maxwell" catalog. If you'll write me I will send you a personal letter of introduction to the "Maxwell" dealer nearest you, and he will give you a complete demonstration of the "Maxwell."

55 Duane St., Tarrytown, N. Y.
Main Plant, Tarrytown, N. Y.
Factories Chicago, Ill., Pawtucket, R. I.

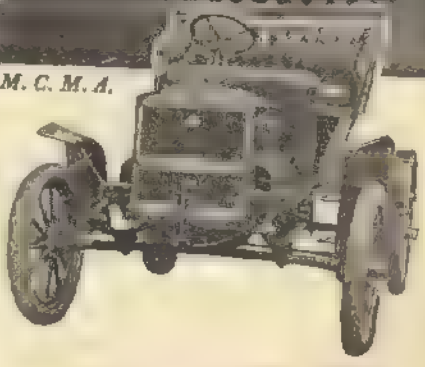
BENJ. BRISCOE
President, Maxwell-Briscoe Motor Co.

Dealers in All Large Cities

Member A. M. C. M. A.



16-20 H. P. Touring Car. $1450.



12-14 H. P. Tourabout. $875.

"The Factory behind the Pierce Great Arrow"

This illustration shows a very comfortable car — the Pierce Great Arrow 40-45 horse-power seven-passenger touring car. The two extra seats in the tonneau are just as comfortable as the other seats. They revolve like an office chair or a parlor car seat so as to add to the sociability of the party in the tonneau. Price $5,000. Cape top extra.

THE completion of the new factory in which Great Arrow cars will now be made marks an epoch in motor car building. This is the most complete factory devoted to the construction of automobiles in the world, and in some respects the most complete factory of any kind in the world. It has been planned to enable good workmen to do their best work. It will enable us to build a great many Great Arrows as carefully as in the old factory in the past we have built a few. It is a factory that multiplies the efficiency of the best selected corps of workmen in the automobile world. We have spent the years that have passed in producing an American car for American conditions so carefully made that it would cover the greatest amount of mileage with the least number of adjustments, and now we have built a factory capable of keeping up the standard of the cars.

The new Great Arrow Factory is but two miles off the main line from New York to Buffalo. Every owner of an automobile and everyone interested in automobile construction is invited to visit this model plant.

The George N. Pierce Company

Buffalo, N Y.

Members of Association of Licensed Automobile Manufacturers

PIERCE DEALERS

J. W. Maguire Co ..... 745 Boylston St., Boston, Mass
Harro ds Motor Car Co., ... Broadway 58th-59th Sts., New York, N. Y.
H. Faulman & Co ..... 1430 Michigan Ave., Chicago, Ill.
Banker Brothers Co. Baum and Beatty Sts., Pittsburg, Pa.
Foss-Hughes Motor Car Co ..... 201 N. Broad St., Phila., Pa.
Ellis Motor Car Co ..... 225 Halsey St., Newark, N. J
Wm. E. Bush.....959 South Main St., Los Angeles, Cal.
Mobile Carriage Co. ..... Golden Gate Ave. & Gough St., San Francisco, Cal
Howard M. Covey.. ..... Portland, Ore
Broadway Auto Co., Inc., ... Broadway & Madison St., Seattle, Wash.
Tom Boteri ..... 1643 California St., Denver, Co.o.
The Geo. N. Pierce Co ..... 762 Golden Gate Ave: San Francisco, Cal
C. P. Joy Auto Co. ..... 368 Minnesota St., St. Paul, Minn
F. A. Nickerson Co ..... 642 Congress St., Portland, Me
Pence Automobile Co. 727 Hennepin Ave., Minneapolis, Minn
J. P. Schneider..... 287 Jefferson Ave., Detroit, Mich.
Metropolitan Motor Car Co..... 1842 Euclid Ave., N. E., Cleveland, O
D. T. Williams Valve Co.,..... 904 Broadway Cincinnati, O.
Zorn-Strauss Co.....518 Third Ave., Louisville, Ky.
Western Automobile Co. 4702 Washington Blvd., St. Louis, Mo.
The Palace Auto Co.....1408 Walnut St., Kansas City, Mo.
Cook & Stoddard Co.....2nd and P. Sts., Washington, D. C.
Southern Auto Co..... Mt. Royal and Maryland Aves., Baltimore, Md
Central Auto Station Co.....92 Renne Ave., Pittsfield, Mass
E. R. Clark Auto Co.....117 Lyman St., Springfield, Mass.
The Minor Garage Co.....High & Allyn Sts Hartford, Conn.
Wilson & Co..... 1217 Craig St., West, Montreal, Canada.
Automobile & Supply Co., Ltd..... 22 Temperance St., Toronto, Ont.
Hubbard Automobile Co., 187 Wisconsin St., Milwaukee, Wis
Foss-Hughes Motor Car Co. ..... 522 Industrial Trust Bld., Providence, R.I.
U. S. Automobile Co.....21 Plymouth Ave., Rochester, N.Y.
Ames-Pierce Auto Co.....209 S. State St., Syracuse, N. Y.
Utica Motor Car Co ..... Utica, N. Y.
Troy Automobile Exchange.....22 Fourth St., Troy, N. Y.
Standard Motor Car Co... ..... Scranton, Pa.
A. E. Lambert,. ..... Titusville, Pa
H. B. Doherty,... ..... 24 Wall St., Binghamton N. Y.
Texas Automobile Co.....614 Milam St., Houston, Tex
N. S. Goodsill, care of American Express Co..... 22 Rue Scribe, Paris, France.

I want to urge you most decidedly to buy

the "Maxwell," because without any exception the "Maxwell" is the car that will give you surest value, dollar for dollar.

¶ But I do not wish you to buy the "Maxwell" until you have been thoroughly convinced, by demonstration, that the "Maxwell" is exactly the car you have been looking for—exactly the car that will take you where you want to go, *when* you want to go, with the very least trouble and the minimum of up-keep expenditure.

¶ Now that the warm-weather touring season is in full blast, those who have put off buying their cars are liable to make hasty purchases. I cannot advise prospective buyers too strongly against this mistake

¶ Make sure you look thoroughly into the principles, construction, general merits and *record* of all the cars about the price which you want to pay, even if it takes you a week or two longer.

¶ If you will write to me, I will give you a personal letter of introduction to

The "Maxwell"

dealer nearest you. He will explain the "Maxwell" principles thoroughly, give you a satisfactory demonstration, and prove to you what a wonderful record the "Maxwell" has made in winning endurance contests, mountain climbs, the Deming Trophy, (Glidden Tour) in 1906, the world's three thousand miles non-stop record, etc., etc.

¶ And if you will address Dept. 7, I will see that you get the complete "Maxwell" catalog.

¶ Be sure you get a "Maxwell" demonstration. *Then* I know you cannot make a wrong decision.

Benj. Briscoe

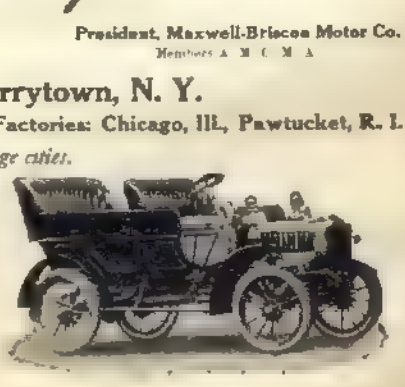
President, Maxwell-Briscoe Motor Co.
Members A M C M A

55 Duane Street, Tarrytown, N. Y.

Main Plant: Tarrytown, N. Y. **Factories: Chicago, Ill., Pawtucket, R. I.**

Dealers in all large cities.

12-15 H. P. Tourabout, $935



20-30 H. P. 5-Passenger Touring Car, $1650

FORD "SOUND LOGIC" TALKS

THE CAR THAT SOLD THE AGENT

No. 4 Get the Series

Ford Agents receive Less discount per car than do the sales agents representing any other lines of motor cars. In fact, the difference to the agent as between a Ford $600 runabout and its closest competitor is more than $100.

Perhaps this is the Reason why some agents who handle various lines, amongst which is the Ford, try so hard to sell the others—perhaps. We have known agents to take on the Ford line just to block its sale.

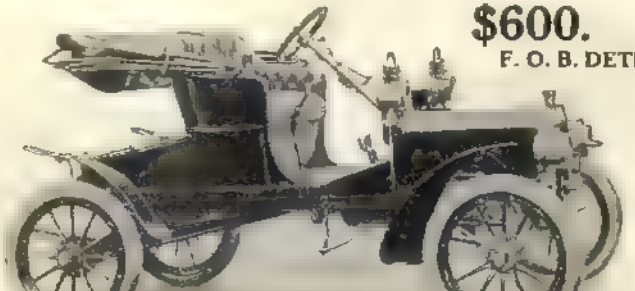
Works Out about this Way: Agent assures customer he is wholly unprejudiced—has he not both lines to sell? What difference can it make to him? (fails to mention the $100.00). Talks so hard against the Ford, customer gets suspicious. Finally insists on comparative demonstration. Sometimes asks to have both cars taken apart—that settles it.

At the End of the Season the agent finds he has sold ten Fords for every other car he has disposed of. Fords have sold themselves, spite of him. He has other cars on hand to sell at loss—no Fords. Fords represent no investment. We ask no guarantee as to number of cars to be taken in a year. We know each agent will want all we can give him.

We Venture the Assertion that not one agent in ten took on the Ford line willingly—his customers forced it. They asked for Fords. Insisted on seeing them—agent had to get the line in self-defense. Today—you couldn't pry a Ford agent away with a crow-bar. He doesn't like the small discount—but he finds the profits on large numbers amount up in a year. And there's no loss, no dissatisfaction. Next season he will handle no other.

Any Competent Man Who Inspects the Ford runabout carefully, critically, must inevitably conclude that, made as it is of Vanadium Chrome steel throughout, machined with absolute accuracy, perfectly adjusted and tested, there cannot be a very wide margin of profit to the maker—on one car. Since the agent's profit is also small—the buyer must be getting pretty nearly "all automobile" for his $600. That's the point exactly. That's why over 5,000 Ford runabouts have already been sold through (originally) unwilling agents.

Sounds like Telling Trade Secrets, but it isn't. The secret of Ford success is the customer's preference—that's all we're telling.



$600.
F. O. B. DETROIT

MODEL N, 4 cyl. 15 h. p. 1050 lbs. The sturdiest thing on Wheels.

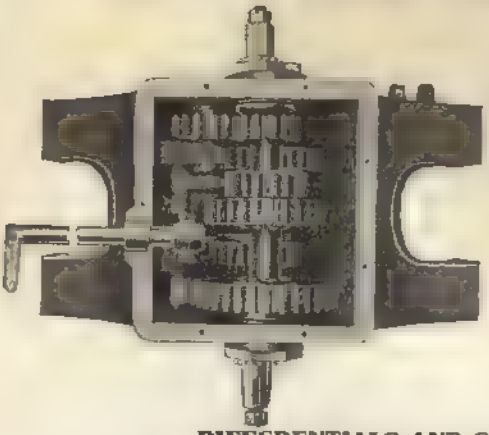
A WORD TO AGENTS. We want agents in all territory where we are not represented. Best automobile agency in the world Any good agent can sell Fords Pure gold needs no gilding.

FORD MOTOR COMPANY, 11 Piquette Ave., Detroit, Mich.

BRANCH RETAIL STORES: New York, Philadelphia Boston, Chicago, Buffalo, Cleveland, Detroit and Kansas City. Standard Motor Car Co., San Francisco, Oakland, and Los Angeles, distributors for California. Canadian trade supplied by Ford Motor Company of Canada, Walkerville, Ont

BROWN-LIPE GEARS

SELECTIVE AND PROGRESSIVE SLIDING GEAR TRANSMISSIONS



DIFFERENTIALS AND STEERING GEARS

Direct Factory Salesmen—K. FRANKLIN PETERSON, 166 Lake St., Chicago. THOMAS J. WETZEL, 29 West 42nd St., New York City.
Sales Agents Carrying Stock—CHAS. E. MILLER, 7 Reade St., New York, 318-320 N. Broad St., Philadelphia, 1043 Columbus Ave., Boston, 406 Erie St., Cleveland, Ohio
Eastern Sales Agents—POST & LESTER CO., Hartford, Conn.

BROWN-LIPE GEAR CO., 206 S. Geddes St., Syracuse, N. Y.

LEATHER LICENSE PADS

FOR THE TRADE

We can furnish you anything made from patent leather

FENDERS, WIND SHIELDS, FENDER FLAPS, Etc.

McKINNON DASH COMPANY

Troy, Ohio
Cincinnati, Ohio

Buffalo, N. Y.

St. Catharines
Ontario

20 YEAR GOLD WATCH—FREE

WITH AUTOMOBILE

LIQUID VENEER

Plain case, latest thin model, No. 16 size, 7 jewel, American movement, stem wind and stem set. Guaranteed to wear like solid gold for 20 years.

Automobile Liquid Veneer will keep a car looking just as if fresh from the factory. No matter how old, scratched, dusty or smutty a machine may have become, one application of **Liquid Veneer** will make it look like brand new. Price 3 doz. qt. bottles, with free premium watch described above $24.00. Retails at $2.00 per qt.

Send us your order at once if you wish to take advantage of this offer

Buffalo Specialty Company

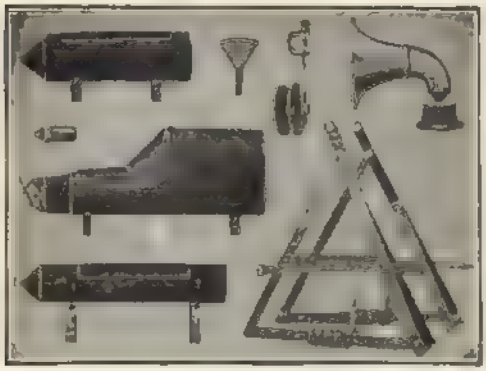
BUFFALO, N. Y.

Motor Cycle Specialties

Tool Boxes, Battery Cases, Stands and Luggage Carriers, Idlers, Electric Horns, Lamp Brackets, Cyclemeter Brackets, Pocket Funnels, Etc.

Indian and Yale Motorcycles

PARTS AND REPAIRS.



Send for Catalogues of 40 Specialties, Etc.

F. B. WIDMAYER, 2312 Broadway, N. Y. City.

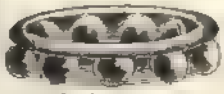
$185.00 **MERKEL**

MERKEL SPRING FRAME 3-H. P. Motor Cycle

MERKEL MOTOR CO., 1098 26th Ave., Milwaukee, Wis.

Who would think of building Bicycles, Coaster Brakes, Lawn Mowers, Sewing Machines and etc., etc., without using The STAR BALL RETAINERS therein?

W H O, tell us?



THE STAR BALL RETAINER CO.
LANCASTER, PA., U. S. A. and
BERLIN S. O. 36. GERMANY

SPRING FRAME

MERKEL

SPRING FORK

CAPACITY FOR OVER 200 MILES

With its positive control, its wonderful hill climbing ability and its large tires, a MERKEL can go on any roads at any time.

50 MILES PER HOUR MERKEL SPEED

The supreme triumph of Motor Cycle construction has been reached in the Merkel. With its elastic spring frame, its spring fork and its cushion saddle, it represents the very highest grade of Motor Cycle on the market. A Merkel never fails.

OUR GUARANTEE Is that the MERKEL 1907 MOTOR CYCLE

has a full 3 H. P. engine, can develop a speed of 50 miles per hour and will please you. Write to us today for all particulars.

MERKEL MOTOR CO.

1098 26th Ave. Milwaukee, Wis.

THOR

Must be on the Motor in your Motor Cycle if it is genuine, and a winner.

Supplied by the following manufacturers:

Reading Standard Cycle Mfg. Co., Reading, Pa.
Miami Cycle & Mfg. Co., Middletown, Ohio.
The Pierce Cycle Co., Buffalo, N. Y.
Light Mfg & Foundry Co., Pottstown, Pa.
Fowler-Manson-Sherman Cycle Mfg. Co., Chicago, Ill.
Emblem Mfg. Co., Angola, N. Y.
Hornecker Motor Mfg. Co., Whiting, Indiana.
Brown & Beck, Denver, Colo.
Brown Mfg. Co., Chicago.

Aurora Automatic Machinery Company

AURORA, ILLINOIS, U. S. A.

BRANDENBURG & CO., Selling Agents, Chicago and New York

MERKEL MOTOR CYCLE

THE SPRING FRAME AND SPRING FORK

Selling Points

MOTOR 3 H.P. air-cooled cylinder 3¼ in. bore and 3.in stroke MERKEL MOTOR.
TANKS Gasoline capacity 2 gallons—lubricating—one quart, sufficient for a continuous run of 200 miles.
WEIGHT [illegible] pounds.
SADDLE—Parson's Motor Seat.
The "HIT" at the Detroit and Chicago Auto Show.
Deal with the manufacturer direct.
Write for Illustrated Catalogue and prices.

MERKEL MOTOR CYCLE CO. 1098 26th Avenue MILWAUKEE, WISCONSIN

THOR

Must be on the Motor in your Motor Cycle if it is genuine, and a winner.

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Light Mfg. & Foundry Co., Pottstown, Pa.
Fowler-Manson-Sherman Cycle Mfg. Co., Chicago, Ill.
Emblem Mfg. Co., Angola, N. Y.
Hornecker Motor Mfg. Co., Whiting, Indiana.
Brown & Beck, Denver, Colo.
Brown Mfg. Co., Chicago.

Aurora Automatic Machinery Company

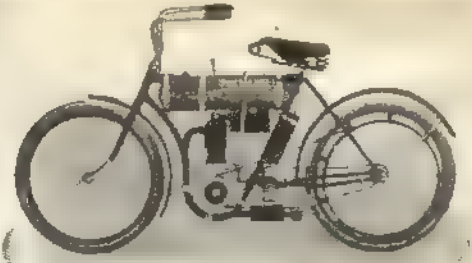
AURORA, ILLINOIS, U. S. A.

BRANDENBURG & CO., Selling Agents, Chicago and New York

MERKEL

1907——————3 H.P.

Motorcycle



takes the lead absolutely. This year we have had the most pronounced success with this Model. Its spring frame protects the rider from all the jolting and jarring, keeps your nerves in order and a ride of fifty miles or more creates an appetite, not a head-ache.

THE MERKEL MACHINE GOES WITH MERKEL SPEED,

climbs hills with almost the same speed as on a level road and no sand is deep enough to stop it.

Write us today, tell us all about what you want and we will please you. Don't forget.

MERKEL MOTOR CO., 1098 26th Ave., Milwaukee.

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Must be on the Motor in your Motor Cycle if it is genuine, and a winner.

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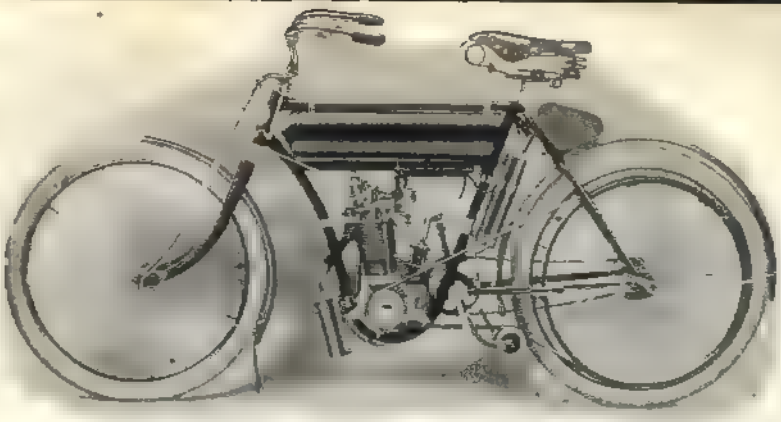


1907 MODEL

YALE - CALIFORNIA MOTOR CYCLE

The Consummation of Mechanical Skill and Engineering.
"Comfort and Reliability" is our motto. Let us tell you about it.
A card will bring our catalogue, and WE SHIP PROMPTLY

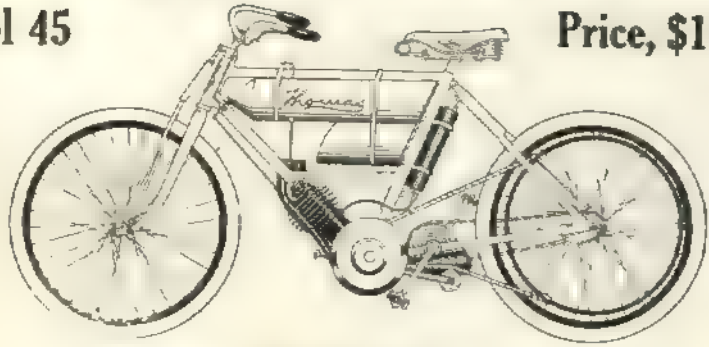
CONSOLIDATED MANUFACTURING COMPANY

Station B, Toledo, Ohio

I. H. WHIPPLE, 260 W. Jackson Boulevard, Chicago, Ill., Agent

NEXT TO FLYING

Model 45 Price, $175.00



THOMAS AUTO-BI

IMMEDIATE DELIVERY

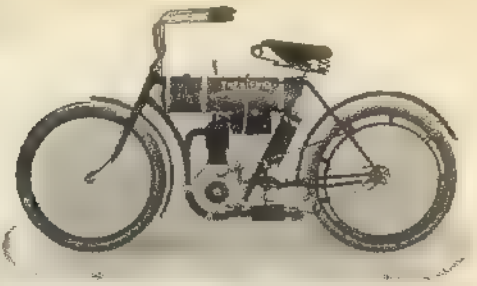
MR. AGENT, you ought to handle an **up-to-date** motorcycle. **You ought to have a sample now.** Our catalogue will **prove to you** why we have the best motorcycle ever built for the use of the average man. Write for catalogue and terms.

THE THOMAS AUTO-BI CO., 1453 Niagara St., Buffalo, N. Y.

MERKEL

1907——————3 H.P.

Motorcycle



takes the lead absolutely. This year we have had the most pronounced success with this Model. Its spring frame protects the rider from all the jolting and jarring, keeps your nerves in order and a ride of fifty miles or more creates an appetite, not a head-ache.

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MERKEL MOTOR CO., 1098 26th Ave., Milwaukee.

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AURORA, ILLINOIS, U. S. A.

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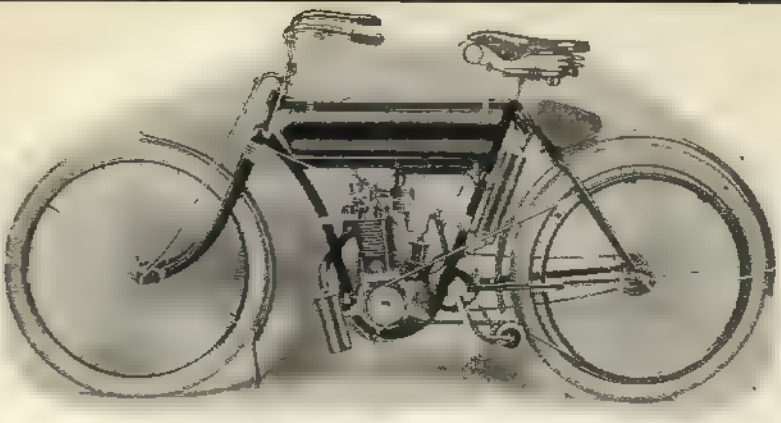

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YALE - CALIFORNIA MOTOR CYCLE

The Consummation of Mechanical Skill and Engineering
"Comfort and Reliability" is our motto. Let us tell you about it.
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CONSOLIDATED MANUFACTURING COMPANY

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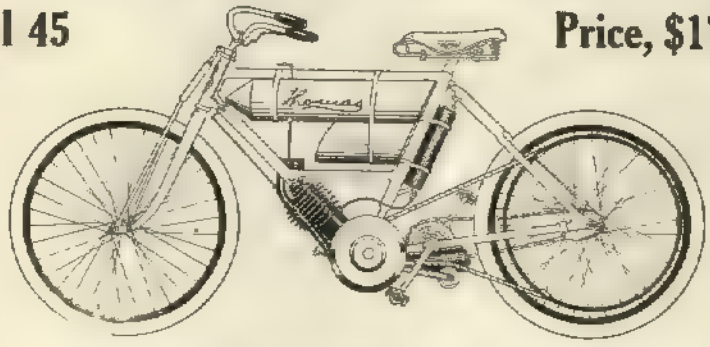
NEXT TO FLYING

Model 45 Price, $175.00



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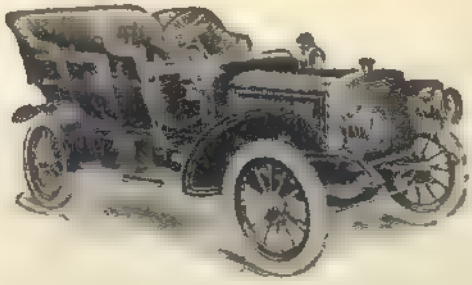
THE THOMAS AUTO-BI CO., 1453 Niagara St., Buffalo, N. Y.



Let the man who is in doubt make a 50 or 500 mile test

in a Mitchell

Are you in doubt as to what car you want? Well, telephone any of our Mitchell agents and say, "Show me a Mitchell and if I'm satisfied I'll buy." Then he'll come around with a 30-35 H. P. $2000 Mitchell and take you and the doubt for a spin of 150 miles—any time you say—and again next day—and again the next, so that you will cover some 500 miles and run up against every test an automobile will ever encounter. If you will do this, we can convince you that the *Mitchell* is the car you want.

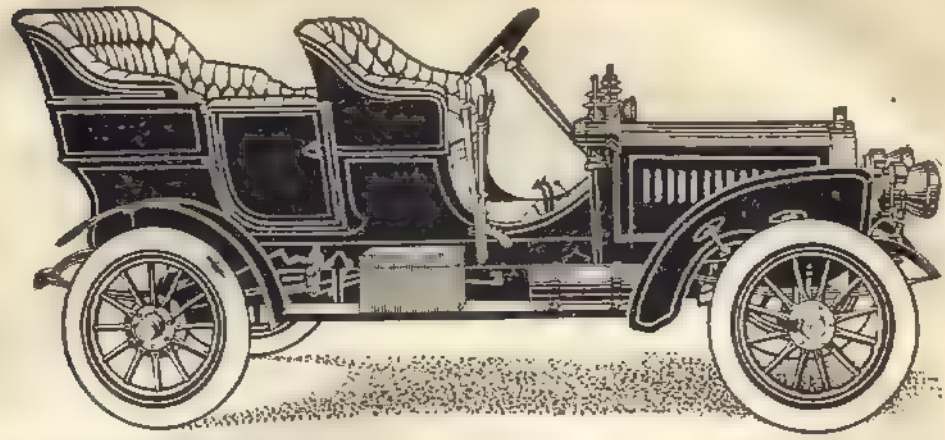
We do not send a *salesman* with you—the car speaks for itself. All we ask is that you constantly remember the *price* of the Mitchell while you ride, and when you get back, that you talk to yourself *seriously* and say: "Can I, a business man, with business judgment, afford to pay from $1000 to $2000 more for any other car—could I get a better looking, a better furnished or more efficient car for the extra thousands? In fact, what *can* I get in any other car for the extra amount which *this* car hasn't 'shown me?'"

The Mitchell will answer those questions for you if you will let it, for it is the "show me" car.

If you will call up our agent and arrange a demonstration, the Mitchell will change your indecision into decision. It will convince you that it is the car you want by doing the things you want your car to do.

The Mitchell Motor Car Co., 30 Mitchell St., Racine, Wis., makers

Mitchell



What a *chauffeur* thinks about automobile prices

"There's going to be a grand wakin' up some day soon on automobile prices. I'm next to the game and I *know*," said a chauffeur.

He was sitting on the driver's seat of a Mitchell Model F, proudly extolling the virtues of his car to his professional brothers.

"What's the *use* of paying from $3000 to $5000 for a motor car?—that's what I'd like to know.

"You've got to show *me* where *you* fellows' cars puts it over the Mitchell. *I've* driven your foreign cars that cost their owners $3000 duty *alone*, and I've driven *American* cars like *Johnson's* there and *Dorsen's*, that set their bosses back $3000 and $5000. I've *rid* in cars like *them*—*slept* in 'em—driven 'em all day long—through rain storms and over roads that were *fierce*. I've babied 'em up hills that they absolutely refused to take on the high. I've taken 'em down and put 'em together again in the garage. I *know* 'em—know 'em *all* from radiator to tail-light and if you fellows think you can *'show me'* just where your cars have got *The Mitchell* skinned, come out on the road with me and let's *see* if you can.

"The boss paid $2000 for *this* car. She's got four of the smoothest cylinders *you* ever saw and she's got *horse-power*—35 and she's done better on hills and under all road conditions than any 50 h. p. $5000 car *I* ever saw, and I've driven 'em all and run up against *every test you can name*. *Your* bosses may like to pay $5000 for a car but *mine* was *wise*. You know there's a good *many* men in this country that shut their eyes tight on $2000 cars merely because they take it for granted that a $5000 car ought to be $3000 *better*. It *ought* to be all right—but *is* it?

"I want the chauffeur that *thinks* his car is $3000 better than the Mitchell to *prove up* with me—in *speed* or *power* or *hill climbing* or *any* old thing he thinks he's *better* at *that's* all. *Yes* sir, if a man's in doubt about the *car* he wants, let him do what my *boss* did—make a 50 or a 500 mile *test* in a *Mitchell*. Any agent will take him out if he's interested in gettin' a car. That'll 'show him' what it showed my boss—and save him about $3000. Beg pardon, sir? Why, yes sir—write to the Mitchell Motor Car Company, 28 Mitchell St., Racine, Wis., and send 10c for Art Catalogue.

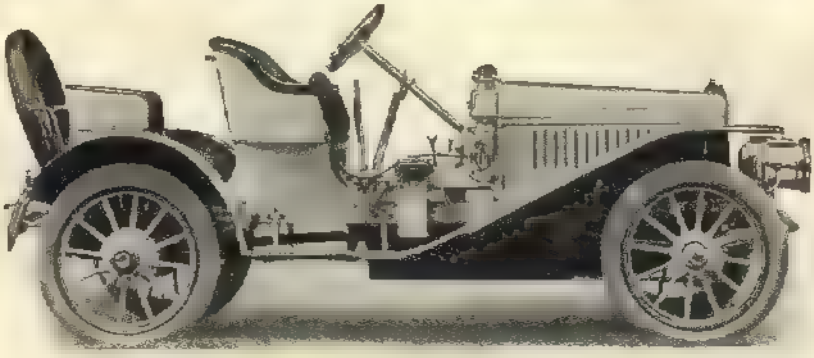
"Well, any of you fellows comin' out? I've got ten dollars in my pocket that says The Mitchell ain't $3000 behind *anybody's* car."

Member American Motor Car Association.

"Show Me" a *Mitchell*

The 30-35 H. P. Type H

Cleveland



The Famous Cleveland Roadster

is a car of exceptional endurance and economy of maintenance. It has proven itself—the car without a weak spot. It is THE car for the prudent buyer.

WRITE TO-DAY FOR THE 1907 CLEVELAND CATALOGUE!

The Cleveland Motor Car Co.

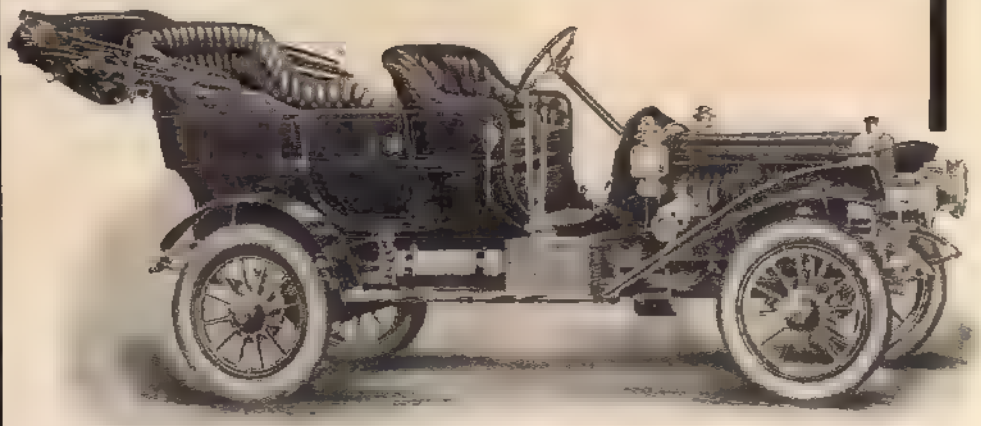
Department 2

Cleveland, Ohio

Every 1907 Cleveland will have on the front of the radiator the new Cleveland Emblem, a cross of green enamel on a field of gold within a red circle. On the road look for the car with the Cleveland Cross, and you will see "The Car Without a Weak Spot"

DISTRIBUTORS:

NEW YORK—E. R. Gallisher, 228-230 West 58th Street, Eastern Distributor.
BOSTON—Butler Motor Car Co., 903 Boylston Street.
PHILADELPHIA—Girard Motor Car Company, 236 North Broad Street.
WASHINGTON, D. C.—Dupont Garage Company
NO. CALIFORNIA—J. W. Leavitt & Co. 441 Golden Gate Ave., San Francisco, Cal.
PITTSBURG—Colonial Automobile Co. 5518-24 Walnut Street.
SEATTLE, WASHINGTON—Mr. C. W. Puell 714 Sixth Ave.
NEW ORLEANS—Crescent City Automobile Company 217 South Rampart Street.
ST. LOUIS, MO.—Van Automobile Co., 4706-10 Washington Ave.
SO. CALIFORNIA—Lord Motor Car Co., 1144 South Main Street, Los Angeles, Cal.
MEXICO—Fernandez, Somellera & Stevens, Guadalajara.



THE $2000 Mitchell

THE STANDARD OF AMERICAN AUTOMOBILE VALUE

Perhaps you've noticed that most cars cost more than the Mitchell.

Did you ever notice that they were any better in finish or in material—or any better in **performance**—on the road?

Ride in a $2000 Mitchell and **see.**

Have any Mitchell agent "show you" a Mitchell.

Look it over—go out into the country and test it on the toughest hill you know of—through some particularly bad stretch of sandy or muddy road. Notice your power—notice speed—notice the sweet running motor—the tranquil action of **all** moving parts - ease of control—notice general efficiency. Mr Prospective Owner

Then if you can see how you'll get two or three thousand dollars more automobile value out of any other car—**buy** the other car, we won't say a word

But you won't **find** more value in any other car.

Present day automobile value is **standardized in** the **Mitchell** at **$2000.**

A demonstration will prove this to **you.**

You are under no **obligation** to buy when you ask for a demonstration.

If you are considering the purchase of a car we want you to **know** the Mitchell, and we want **to show** you what you get in a Mitchell at $2000 and that you can't get any **more** in **any other** car, **regardless** of the price

Call up the Mitchell agent.

The Right Price for the Right Car

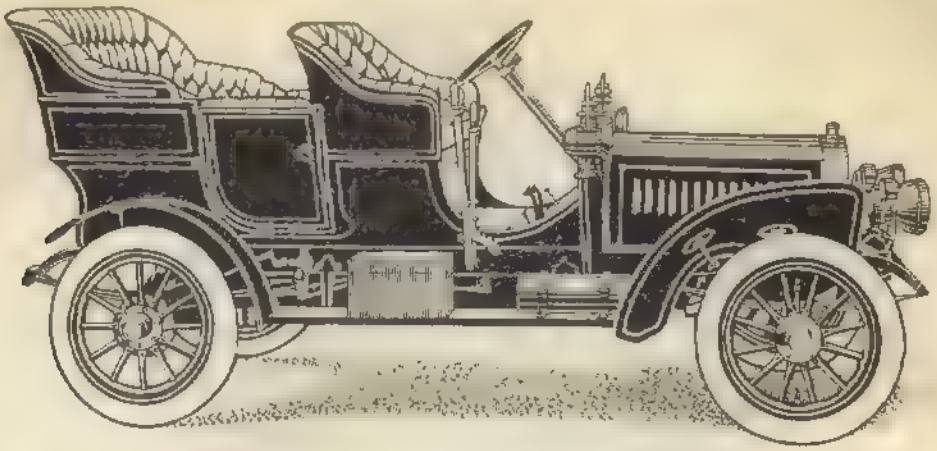
$2000

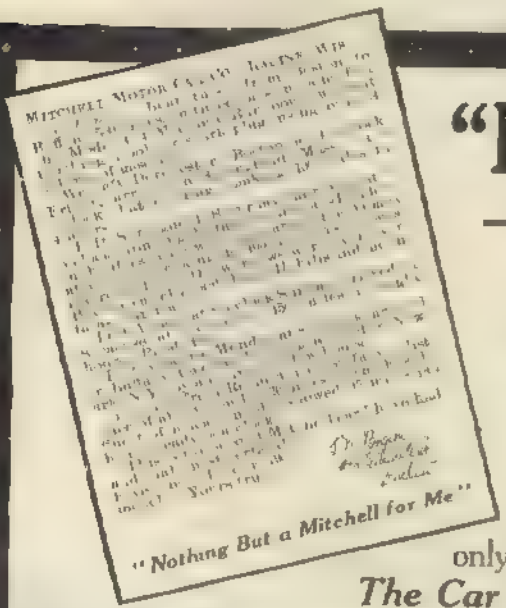
WRITE US FOR CATALOGUE No. 18

MITCHELL MOTOR CAR CO.

245 MITCHELL STREET :: RACINE, WIS.

Member American Motor Car Mfr's Ass'n





"Beat this"

—so says an enthusiast

From Boston to Buffalo, 550 miles, in three days and a half, in a Model C-4 Mitchell, without touching a bolt or spark plug, using only 24 gallons of Gasoline.

The Car That "Showed Me"

The Mitchell Motor Car Co., 27 Mitchell St., Racine, Wis.

Members American Motor Car Manufacturers' Association

Mitchell

High Speed Oil

On a long, hard, fast run, Mobiloil will add as much to the efficiency of your engine as an extra gear. It is the one perfect Automobile lubricant—reducing friction to practically zero.

VACUUM

MOBILOIL

is prepared in several grades—each automobile requiring a lubricant especially suited to it. Mobiloil meets every requirement of every automobile. To assist the motorist, an interesting little booklet has been prepared, giving the name of every automobile and the grade of Mobiloil for its proper lubrication. It's free. Mobiloil is sold by automobile supply houses everywhere, in barrels and cans of varying capacities.

Manufactured by

VACUUM OIL COMPANY, Rochester, N. Y.

The Glide Automobile

1000 inches Braking Surface make !!

"THE GLIDE" the Car of Control

"A HILL CLIMBER BUILT IN THE HILLS"

Nearly three times as much braking surface as is even claimed by any other car. This is only one of the reasons why Model G. GLIDE for 1908 is the most popular car on the market, and is **is** the most popular Another is its noiselessness.

Model G, GLIDE for 1908

40|H. P. Seats Seven

When You Run a GLIDE You Hear No Noise

Save the Obedient Whisper of the Motor

For this fact it costs less to sell a GLIDE than any other car. We will show you the figures. The big demand makes it the paying car for dealers. More sales—less trouble and expense. *Write for handsomely illustrated catalog.*

The BARTHOLOMEW COMPANY, 210 Glide St., Peoria, Ill.

Members American Motor Car Manufacturers' Association, New York.

WHAT YOU HAVE BEEN LOOKING FOR

A Four Cylinder TWO CYCLE AIR COOLED MOTOR

In a Light But Strong Racy Looking Car

The PAGE-ADRIAN

with more unique features than any car on the market—Specifications and cuts in next issue—Wait. Also higher powered model.

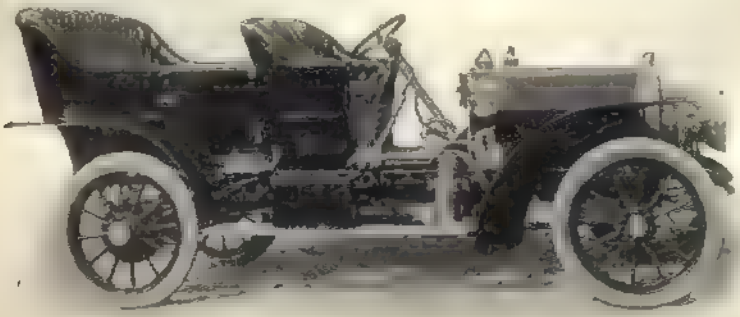
THE PAGE GAS ENGINE CO.

Adrian, Mich.

PENNSYLVANIA

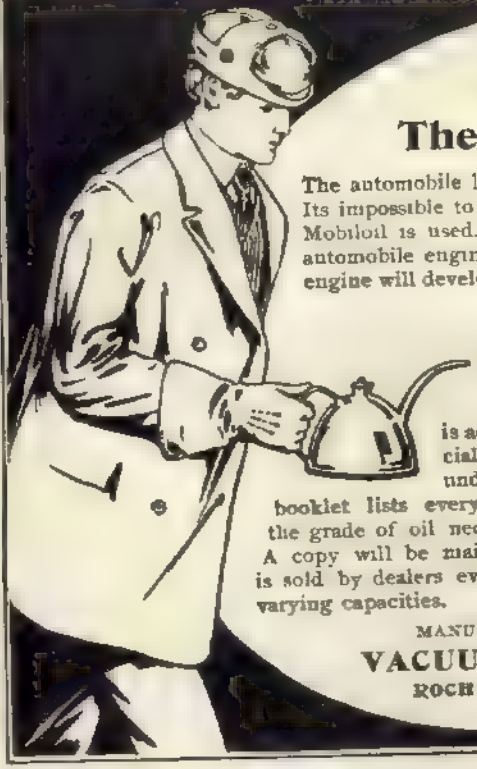
BUILT TO USE.

A carefully constructed motor car for continued use—over our questionable roads—30 H P., 2500 pounds—$2800.00. The mechanical construction and refinement are set forth in a catalogue sent upon request.



PENNSYLVANIA AUTO MOTOR CO.

BRYN MAWR, PA.



The Man Who Drives Is The Man Who Knows

The automobile lubricated with Mobiloil always drives easy. Its impossible to go wrong on the lubrication question when Mobiloil is used. There's a special grade for every make of automobile engine and when this particular grade is used, the engine will develop its maximum power.

VACUUM

MOBILOIL

is accurately compounded and is especially prepared to meet every condition under which your engine works. Our booklet lists every make of automobile and tells the grade of oil necessary for its proper lubrication. A copy will be mailed free upon request. Mobiloil is sold by dealers everywhere, in barrels and cans of varying capacities.

MANUFACTURED BY
VACUUM OIL CO.,
ROCHESTER, N. Y.

HAVOLINE

¶ The best motor oil is the one which, having the required body, contains the least carbon.

¶ Filtration decreases carbon, and the lightest colored oils show the most filtration—the least carbon.

¶ That Havoline oils are filtered more—contain less carbon—and are better than other oils—is proved by their lighter color.

¶ We make a trial proposition to owners.

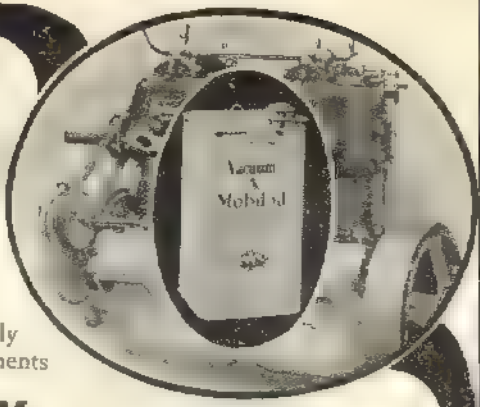
HAVOLINE OIL COMPANY

1906 BROADWAY (63d St.)

HAVOLINE MOTOR OILS

NEW YORK CITY

The Right Oil In the Right Place



There is only one correct oil for automobiles —the oil which has been especially prepared for it. That oil is Mobiloil. Mobiloil is not an ordinary hit or miss lubricant. It comes in several grades, each grade having been accurately compounded to meet the particular requirements of certain automobiles.

VACUUM

MOBILOIL

is the only oil which you can use on your engine with absolute safety. We have prepared an interesting booklet which lists every make of automobile and tells exactly what grade of Mobiloil is necessary for each. A copy will be mailed free upon request. Mobiloil is sold everywhere by dealers in automobile supplies. Mobiloil in its several grades may be had in barrels and cans of varying capacities.

MANUFACTURED BY

VACUUM OIL CO., Rochester, N. Y.

As an illustration to show the diversity of the production of

THE BIDDLE & SMART CO.,

AMESBURY, MASS.

we give a record of seven car-loads of Automobile Wood-work shipped from our factory during the last six days of April.

First —Car-load Top Runabout Bodies and Limousines completely upholstered and finished.

Second —100 sets body stock to be used in building metal bodies.

Third—Fourth, Fifth and Sixth car-loads of Touring Car bodies all completely upholstered and painted.

Seventh —Touring Car Bodies in the White for Machines selling for $4,500.00.

Above production was completed entirely in our own plant under one management and for one profit; an actual statement of facts which should be of decided interest to Automobile Manufacturers who require deliveries, quality and quantity

Incidentally the shipment for the month consisted of fifteen separate car-loads in addition to a large number of local deliveries.

THE BIDDLE & SMART COMPANY,

AMESBURY, MASS.

Manufacturers of Automobile Bodies of Every Description.

How To Oil Your Engine

The indiscriminating application of oil to the automobile engine does not necessarily result in lubrication. Oil adapted to a steam automobile would utterly fail to lubricate an air-cooled gasoline cylinder on account of its different temperature. An oil might interfere with the sparking plug of one engine, and yet be exactly suited to another.

VACUUM

MOBILOIL

Note Patent Pouring Spout

is made for every style and and type of automobile engine. Any dealer in automobile supplies can furnish it, and we will send on application a booklet, listing every automobile made, showing which of the five different grades of **Mobiloil** is adapted to its use. Booklet contains suggestions of practical worth to all motorists, and track records to date.

Ask your dealer for **Mobiloil**—ask *us* for the booklet. It's freely yours.

Manufactured by the

VACUUM OIL CO., Rochester, N. Y.

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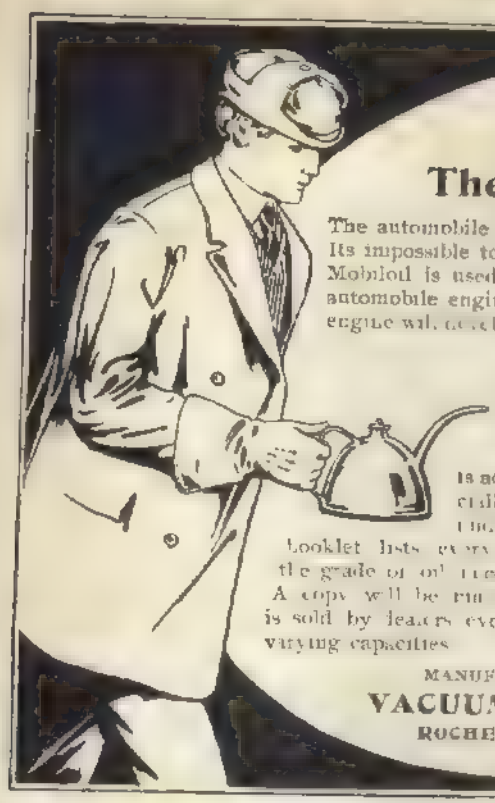

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VACUUM

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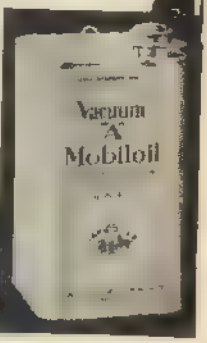
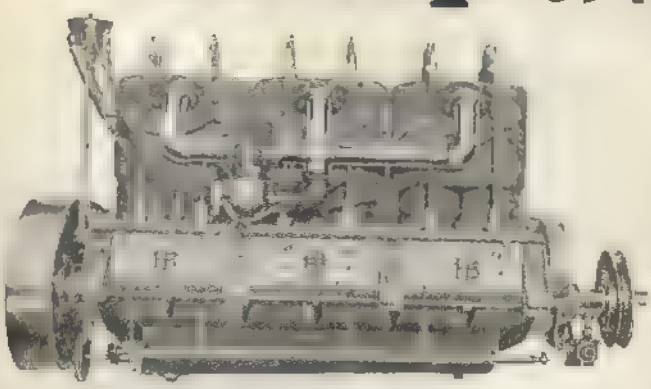


MANUFACTURED BY
VACUUM OIL CO.,
ROCHESTER, N. Y.

Powerful E-B Reliable

Motor 1907 Model



6 Cyl. 55-60 H. P. E-B Automobile Motor.

Sizes 4 to 8 cyl. ... Standard styles ... 4 or 3 Speed Transmissions. Roller Bearings all around. ... Acme Quick Detachable Rims. Write for Catalog and Prices. A Postal to Department A brings all ...

Distinctive Features:
Perfect Cooling
Quiet Running
Proper Proportions
Accessibility

Adapted for lightest to heaviest service for

AUTOMOBILE, MARINE and Other Purposes

Brownell-Trebert Company,

634-666 Lexington Avenue, Rochester, N. Y.

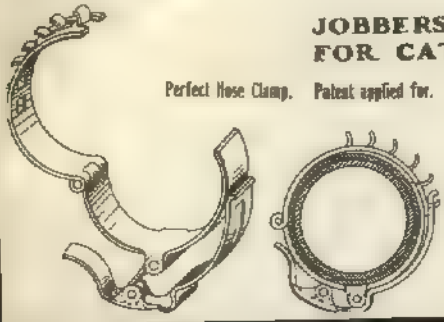
Automobile Accessories

That Add Fifty Per cent to the Pleasure of Motoring

Oil or Gasoline Reservoir.

Our Double Acting Sprag—Locks car or stops it in either direction.
Our Hose Clamp—Securely fastens rubber hose pipe. Easy to apply, easy to remove, easily adjusted.
Our Oil Reservoirs—Place small supply right at hand for filling oil gun.
Our Gasoline Reservoir—Keeps supply easily accessible for cleaning spark plugs and priming cylinders.
Our Upright Oil Can Holders—Prevent leakage of oil on robes, tools, etc.

JOBBERS AND DEALERS WRITE FOR CATALOGUE AND PRICES


Perfect Hose Clamp. Patent applied for.

The Philadelphia Automobile Accessories Company

Room 217 Odd Fellows Temple, Broad and Cherry Sts.

PHILADELPHIA

MANUFACTURING ROCHESTER HAM COMPANY NEW YORK, U.S.A.

HAM'S "COLD BLAST" SQUARE LAMP

HAM'S ROCHESTER

Our Square Lamp is very beautiful in design. The exterior is highly finished and the reflectors are silver plated highly polished, making a very bright interior. It is fitted with beveled glasses and makes a very pleasing appearance.

It is built on our celebrated "Cold Blast" principle which means perfect combustion; thus you always have a clear, bright, steady light that will not smoke, emits no odor, and is guaranteed not to blow or jar out

[illegible]

C. T. HAM MFG. CO.
Rochester, N. Y.

Details Make The Car

In The Model 24

Rambler

is every feature that makes mechanical excellence and general attractiveness.

Constructive Details

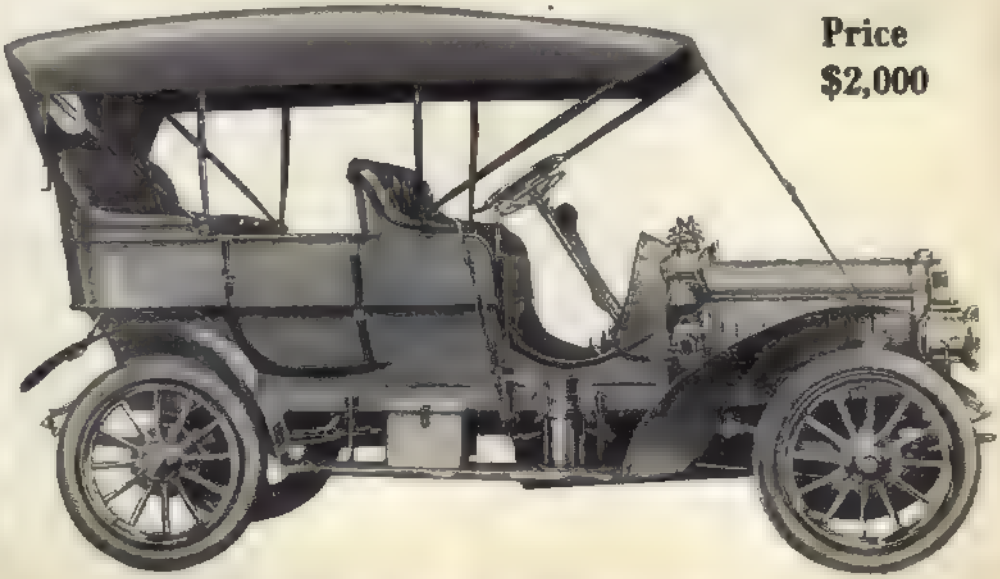
Motor—four-cylinder verticle, 4½ inch bore, 4½ inch stroke that gives full 25-30 horse power at the road wheels.
Transmission—sliding gear of a special type in which all trouble in shifting gears is absolutely avoided.
Final drive—propeller shaft and bevel gears with floating type rear axle fitted with ball and roller bearings throughout. Wheel base—108 inches, wheels 34 inch with 4 inch tires.
All accessories, such as mechanical sight feed lubricator, circulating pump, ignition timer, etc., are of the latest and most approved types.
Equipment includes full cape top, five lamps, horn, tools, storage battery, etc.
Price, as below, $2,000.
Our catalogue, describing this and five other models—$950 to $2500—is at your service.

Main Office and Factory, Kenosha, Wisconsin

Branches:

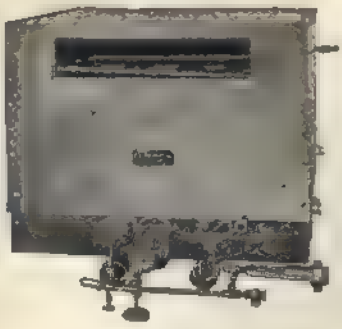
Chicago, Milwaukee, Boston, Philadelphia, San Francisco.
New York Agency, 38-40 West 52nd Street. Representatives in all leading cities.

Thomas B. Jeffery & Company



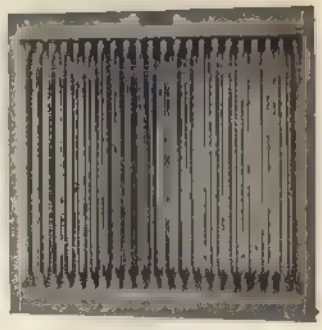
Price $2,000

Flash Boilers For AUTOMOBILES and MOTOR BOATS



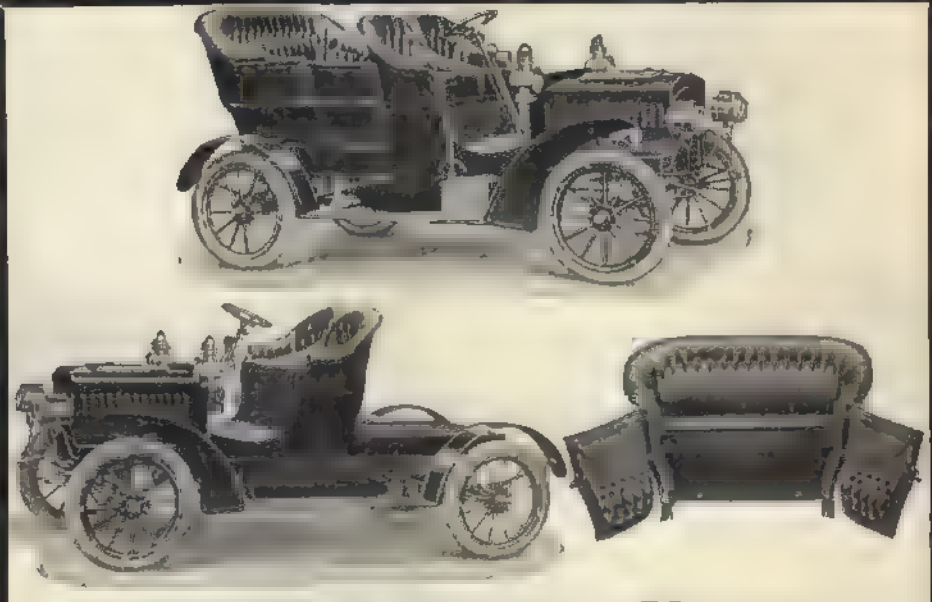
Approved by U. S. Government for Marine Service.

No Water Glass or Cocks. Safe, Automatic and economical. No scale or incrustation.



Any pressure desired. High pressure and super-heated steam means economy. With our outfit 400 pounds of steam can be raised in three (3) minutes from lighting of match. For either Automobile or Motor Boat, the flash boiler makes an ideal equipment. It occupies small space, and is light in weight. We can furnish complete power plants or parts, as desired. Our 1907 kerosene burner is the height of perfection. Either kerosene or gasoline burners in all sizes for any make of car. If you are a devotee of steam, our literature will interest you. If you are skeptical an investigation of our up-to-date and new steam appliances will convince, will convert you. **Ask for big Catalogue C**

E. C. WALKER CO., 1905-23 Logan St., Louisville, Ky.

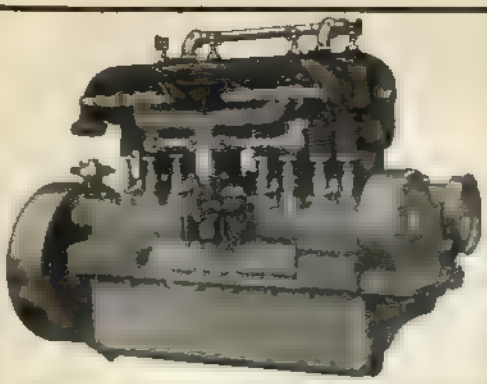


INTERESTING FEATURES.

24 H. P. Motor. Mechanical Oiler. 100" Wheel Base.
Detachable Tonneau. Tilting Body.

The largest, most powerful and the easiest riding car on wheels selling at $1250.00
We can make prompt deliveries.
Ask for specifications of our 60 H. P. 6 cylinder machine, price $3000.00

Model Automobile Company, - Peru, Indiana.



"CONTINENTAL MOTORS"

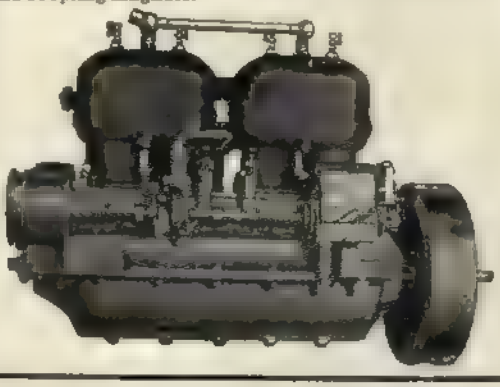
ARE STANDARD

"Continental" motors command consideration in preparing specifications for high grade cars. They are correct in design, handsome in appearance and efficient and economical in operation. We are in position to furnish motors unequaled on the American market, in any quantity desired and with guaranteed deliveries.

Our new plant is equipped with modern machinery for accurate workmanship and is devoted entirely to manufacturing high grade motors. Cut shows our 4¾ in x 5 in 4-cylinder motor which is furnished with self-contained lubricating system or with plain oil pan, as ordered. Also furnished ready for attaching and coupling magneto.

All motors are tested at our plant under full load and delivered ready for service. Our product is the result of years of experiment and its refinements in details meet with the approval of discriminating purchasers. All parts are made absolutely interchangeable.

We are ready to contract in quantities for season of 1908. Deliveries guaranteed. Printed matter and details upon request.



CONTINENTAL MOTOR MFG. CO.

Muskegon, Mich.

K. FRANKLIN PETERSON, Factory Representative, 166 Lake St., Chicago, Ill.

AIR COMPRESSORS

BELTED—MOTOR DRIVEN

Single and Three Cylinder Styles

Just the thing for public or private garage for inflating tires, cleaning cushions, etc.

ANNEALED ENGINE PISTONS AND PISTON RINGS, CONNECTING-RODS, MITRE AND ENGINE GEARS.

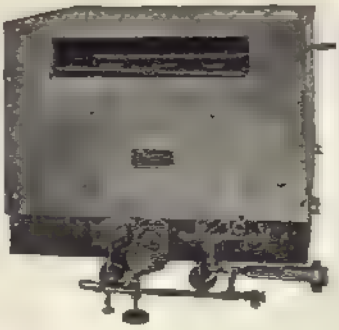
We are also prepared to furnish finished die-cast Nickel Babbitt or White Brass Crank Shaft or Connecting Rod Bushings.

Season Contract Work Specially Solicited. **Send Us Your Specifications.**

THE F. W. SPACKE MACHINE CO.

INDIANAPOLIS, IND., U. S. A.

Flash Boilers For AUTOMOBILES and MOTOR BOATS



Approved by U. S. Government for Marine Service.

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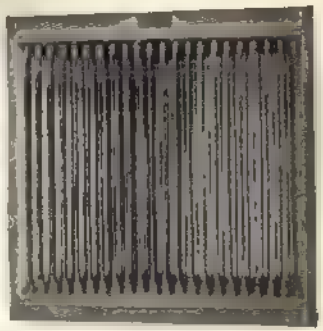
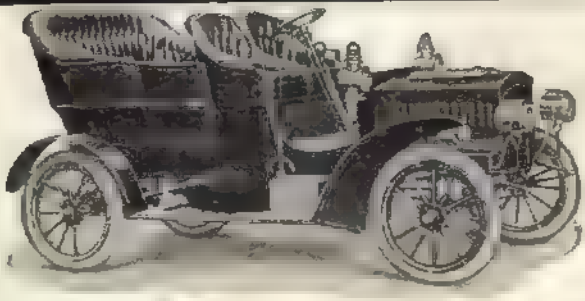


Any pressure desired High pressure and super-heated steam means economy. With our outfit, 400 pounds of steam can be raised in three (3) minutes from lighting of match For either Automobile or Motor Boat, the flash boiler makes an ideal equipment It occupies small space, and is light in weight. We can furnish complete power plants or parts, as desired Our 1907 kerosene burner is the height of perfection. Either kerosene or gasoline burners in all sizes for any make of car If you are a devotee of steam, our literature will interest you If you are skeptical, an investigation of our up to date and new steam appliances will convince, will convert you. Ask for big Catalogue C.

E. C. WALKER CO., 1905-23 Logan St., Louisville, Ky.



INTERESTING FEATURES.

24 H. P. Motor. Mechanical Oiler. 100" Wheel Base.
Detachable Tonneau. Tilting Body.

The largest, most powerful and the easiest riding car on wheels selling at $1250.00
We can make prompt deliveries.
Ask for specifications of our 50 H. P. 4 cylinder machine, price $3000.00.

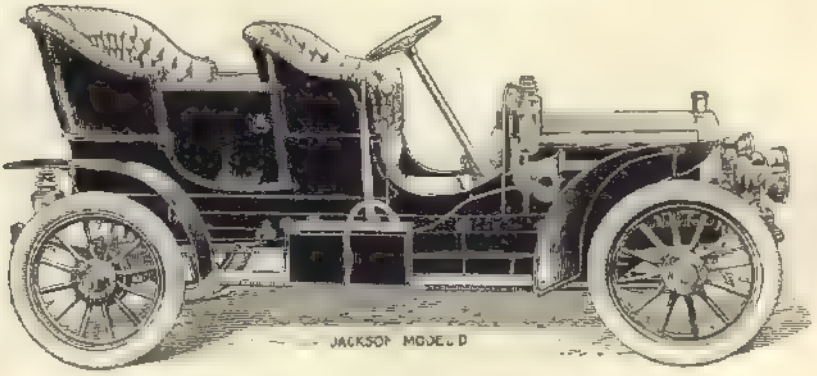
Model Automobile Company, - Peru, Indiana.

THE VALUE IS THERE!

Ask anyone who knows and who is not prejudiced by trade jealousy

The popularity of this car has grown by leaps and bounds

"No sand too deep"
"No hill too steep"



The Model D Jackson

Price $1500. Two cylinders, horizontally opposed, under the hood, giving much of the effect, in looks, of a four-cylinder car. Horse Power, 24. Bevel-gear drive. Wheels, 32x3½. Ample seating capacity for five persons. Complete equipment of horn, lamps, etc.

JACKSON AUTOMOBILE CO.
JACKSON, MICH.

MATHESON
The Standard American Car.

SOME big beautiful foreign cars sell for $10,000 to $14,000. Are they worth it? Certainly they are. So is the Matheson; it is just as big; just as beautiful, and its performances over the roughest American roads, without a single repair or adjustment, far surpass the performances of any foreign car. For use in America the Matheson is worth **more** than any foreign car you can buy.

REASONABLE DELIVERIES

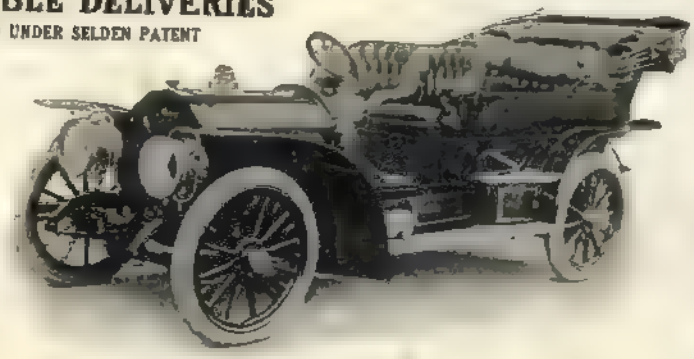
LICENSED UNDER SELDEN PATENT

Touring Cars

Runabouts

35 H. P., - $4,500

50 H. P., - $5,500



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The MATHESON COMPANY of New York

1619-21-23 Broadway

THE VALUE IS THERE!

Ask anyone who knows and who is not prejudiced by trade jealousy

The popularity of this car has grown by leaps and bounds

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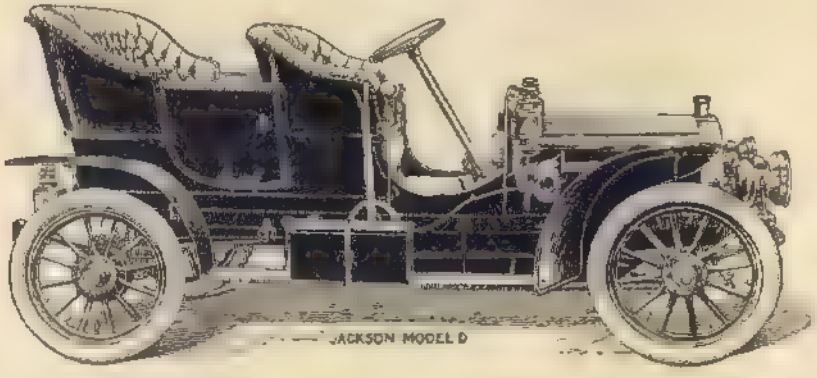
"No hill too steep"



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JACKSON AUTOMOBILE CO.
JACKSON, MICH.

Model 67, Pope-Waverley Victoria Phaeton

Our Victoria, Model 67, Price $1,700, is the successful outcome of a long series of efforts to embody in this deservedly popular type of carriage certain distinctive ease-inducing features.

POPE Waverley ELECTRICS

¶ Among these we may mention the dropped sill or floor support, which materially lessens the distance between the floor of the car and the ground, thus reducing to a minimum the fatigue incidental to repeatedly entering and leaving the carriage. The seat also is low, broad and deeply upholstered, in every way calculated to provide a degree of physical and mental comfort not easily obtainable in other conveyances.

¶ *We have agents in all principal cities. We make Runabouts, Stanhopes, Surreys, Open and Closed Chelseas, Physicians' Road, Station and Delivery Wagons. Electric Trucks to Specifications.*

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Pope Motor Car Co.

Waverley Department · INDIANAPOLIS, IND.

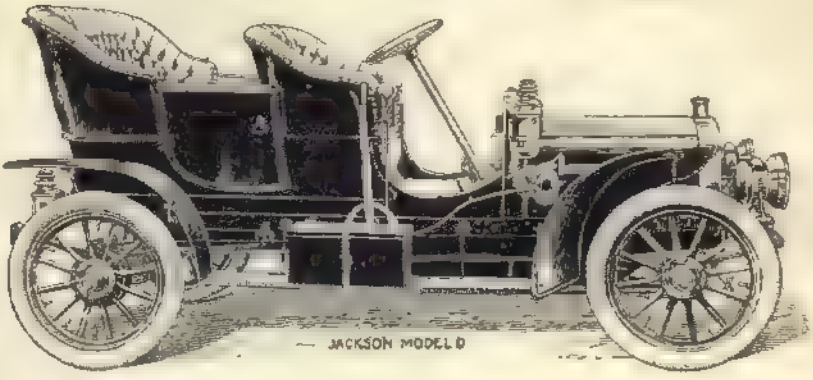
POPE Waverley ELECTRIC AUTOMOBILES

THE VALUE IS THERE!

Ask anyone who knows and who is not prejudiced by trade jealousy

The popularity of this car has grown by leaps and bounds

"No sand too deep"
"No hill too steep"



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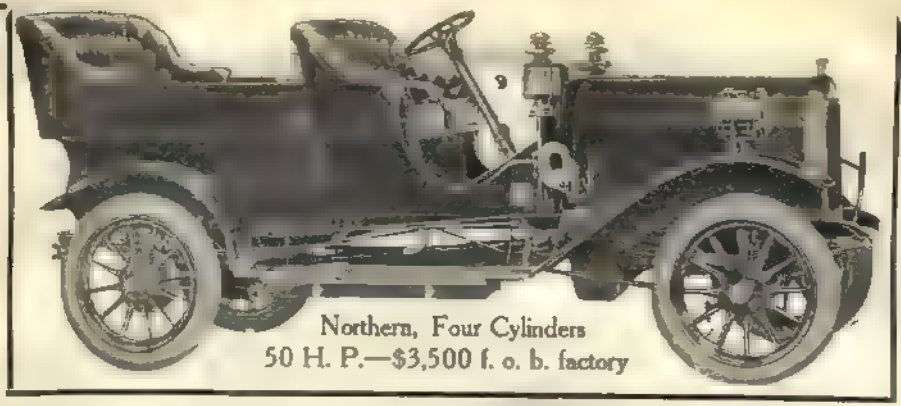
JACKSON, MICH.



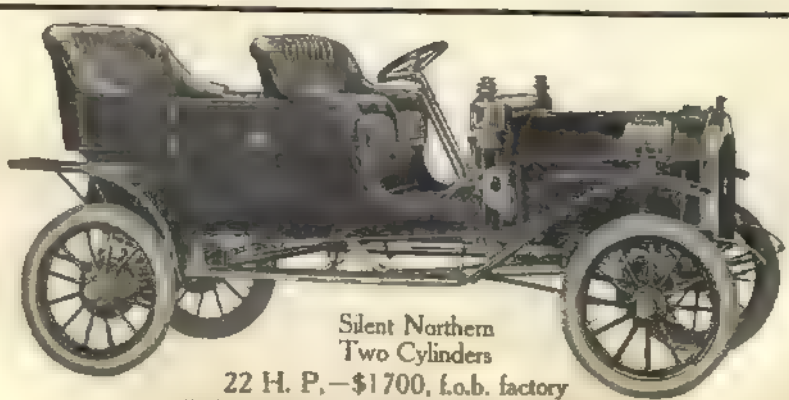
Northern, Four Cylinders
50 H. P.—$3,500 f. o. b. factory

The only Air Controlled Car. Note these points: Ease of Operation—All speed changes made with one small lever. Throttle and Air Brake lever one—and inter acting. No side levers and only two pedals—reverse and independent brakes. Ratchet starting lever eliminates cranking. Tires mechanically inflated from air compressor. **Reliability:** The Air Brakes respond instantly—always. The self adjusting Air Clutch never requires "taking up." It takes hold at any speed without jar or jerk. **Style:** Comparison proves this car the leader. Its beautiful lines and luxurious upholstery represent the most advanced ideas. Our handsome Catalog gives details. Send for it.

NORTHERN

MOTOR CAR CO., DETROIT

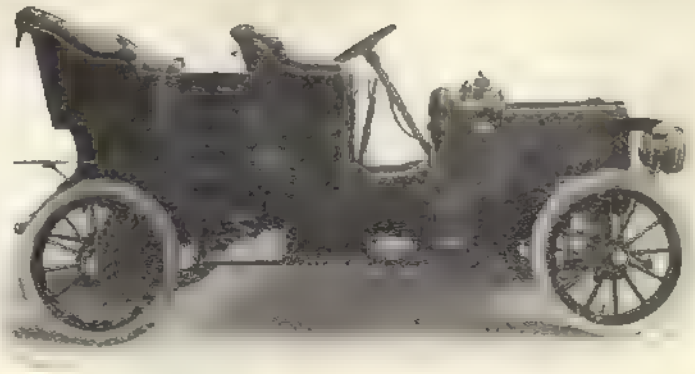
The "Silent Northern," two cylinders, with new straight-line body, is the handsomest and most efficient car of its type. Far superior to the vast majority of **four** cylinder cars; quieter, less vibration, easier operated, more durable, more dependable, lower cost of maintenance and better finished—and shows it. **The test of three seasons** has proved the correctness of Northern design and the worth of Northern encased mechanism, three point engine support, direct shaft drive, and strong rear axle construction. These and other Northern advantages reduce cost of maintenance nearly 50 per cent—and increase the satisfaction of operating almost 100 per cent. The Catalog tells why—write for it.



Silent Northern
Two Cylinders
22 H. P.—$1700, f.o.b. factory
Member Association of Licensed Automobile Manufacturers

Moline

24 H. P.



$2000

Model "S" Touring Car

A car of quality at a reasonable price.

Substantially built to withstand hard service.

A power plant of unequaled flexibility, giving 24 H. P

In addition to the Model "S" the line includes:

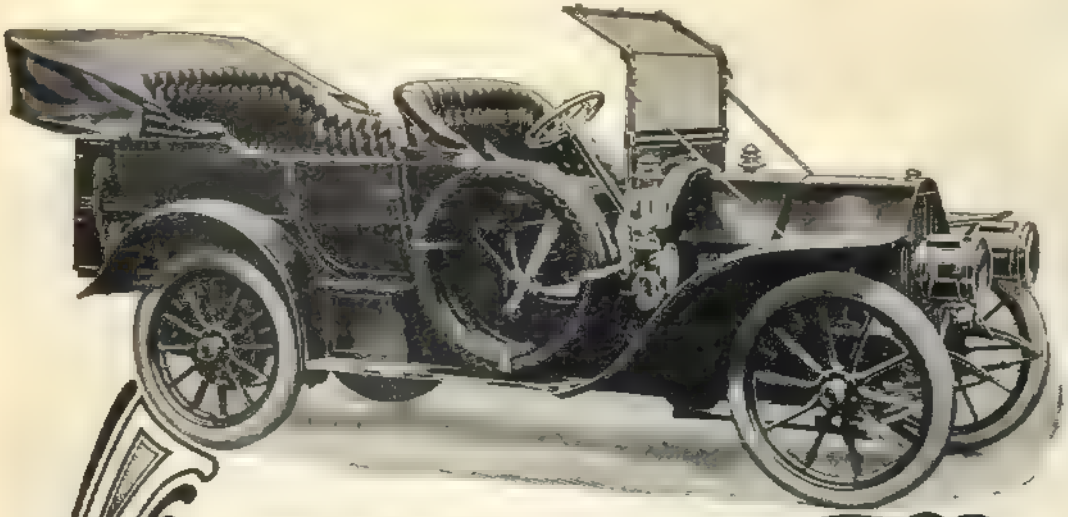
Model "A," 35 H.P. Five Passenger Touring Car
Model "C," 20 H.P. Two or Three Passenger Roadster
Model "H," 18 H.P. Five Passenger Touring Car

Write us for our 1907 Catalogue, which gives complete descriptive matter together with cuts

Moline Automobile Co.

East Moline, Ill.

Member of American Motor Car Manufacturers' Association.



Type XV, 50 H. P. Pope-Toledo
Price, Fully Equipped $4,250

You can learn more about a really high-class motor car in an hour's ride in the 50 H. P.

POPE-TOLEDO

than we could tell you in ten pages of this publication.

A demonstration will prove to you that this car is more powerful' faster, easier handled, easier riding and sweeter running than any car on the market.

Comparison will show you that its construction embraces more alloyed steel, more ball bearings, more of the world's best and latest practice in design, workmanship and material than any other American car.

All we ask is investigation and comparison. The more you compare, the closer your investigation, the more you'll become convinced your choice should be a Type XV Pope-Toledo.

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Pope Motor Car Co.

A.L.A.M. **TOLEDO, O.**

POPE Toledo AUTOMOBILES

Moline

The MOLINE is a car which "does things," as witness its brilliant record in the Sealed Bonnet, Non-stop Motor Reliability Contest of the Chicago Motor Club, in which it covered 174 miles of country roads with a perfectly clean score, the engines not being stopped until long after the contest was over.

This car was a stock car, exactly the same as is sold to customers. Isn't this proof that the MOLINE cars are thoroughly reliable? It will pay you to examine them thoroughly.

Made in four models:

Model "S"—Touring car, 24 H. P., $2,000
Model "A"—5 Passenger Touring car, 35 H. P., $2,500
Model "C"—Two or three passenger Roadster, 20 H. P., $1,800
Model "H"—Five passenger Touring car, 18 H. P., $1,250

Moline Automobile Co.

East Moline, Ill.

Member of American Motor Car Manufacturers' Association.

LUXURY

as expressed in a Pierce Great Arrow Enclosed Car

THE FIRST REQUISITE of an enclosed car is comfort; the second is elegance. The Pierce Great Arrow Suburban is the last word in the appointment of a car for city use. It is built upon the Great Arrow Chassis, which means perfection in running. The body is built in our own factory—that new factory which adds so much to our facility to produce good cars. Most of the body is aluminum, which is far better than wood, not only in looks and wear, but also in resistance to shocks. The inside of this car has every appointment that good taste, convenience and ingenuity can suggest. It offers the advantages of a well-equipped city carriage combined with a long-distance touring car, each perfect in itself, each doubly perfect in combination.

All Pierce dealers will be able to supply the latest models of enclosed cars after August first at the following prices:

The 30 H. P. Pierce Great Arrow Enclosed Car, $5,000.00

The 45 H. P. Pierce Great Arrow Enclosed Car, $6,250.00

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Banker Brothers Co. . . . . Baum and Beatty Sts., Pittsburg, Pa.
Fow-Hughes Motor Car Co . . . 201 N. Broad St., Philadelphia, Pa
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Bush & Shields . . . . . 953 South Main St., Los Angeles, Cal.
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Wilson & Co. . . . . 42 Bank St., Ottawa, Canada,
Automobile & Supply Co., Ltd. . . . 24 Temperance St., Toronto, Ont.
Hubbard Auto Co. . . . . 187 Wisconsin St., Milwaukee, Wis.
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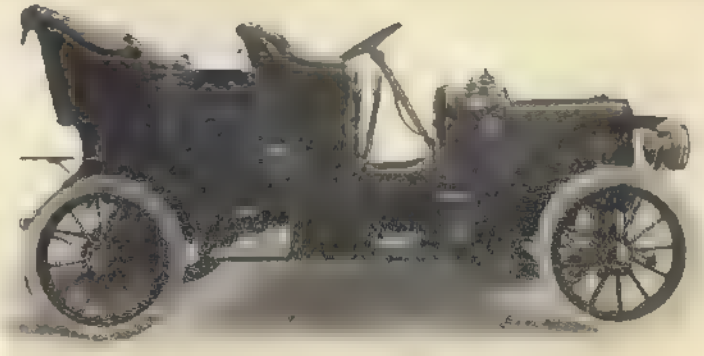
The Geo. N. Pierce Company Members of Associated Licensed Automobile Manufacturers Buffalo, N. Y.

Moline

24 H. P.



$2000

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A car of quality at a reasonable price.

Substantially built to withstand hard service.

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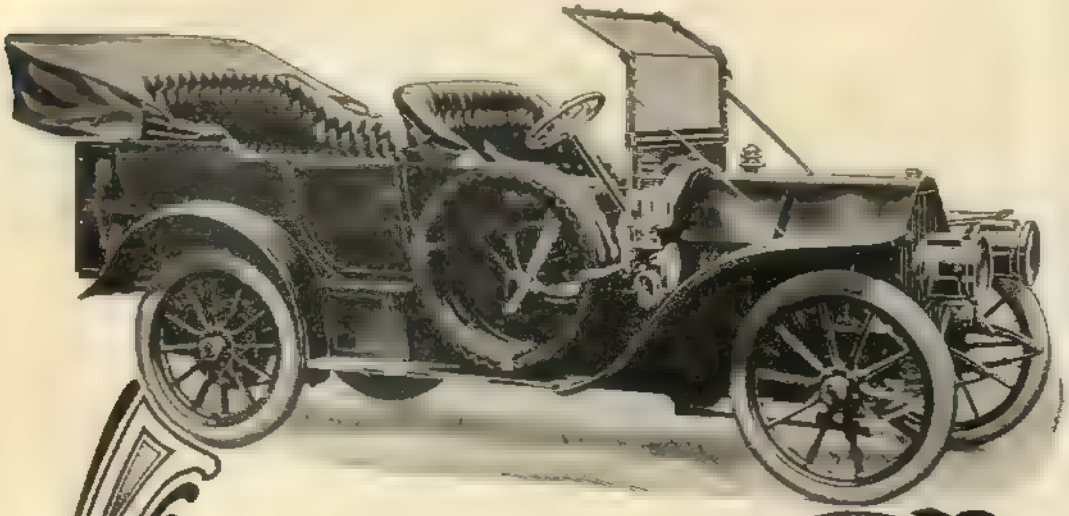
Moline Automobile Co.

East Moline, Ill.

Member of American Motor Car Manufacturers' Association.



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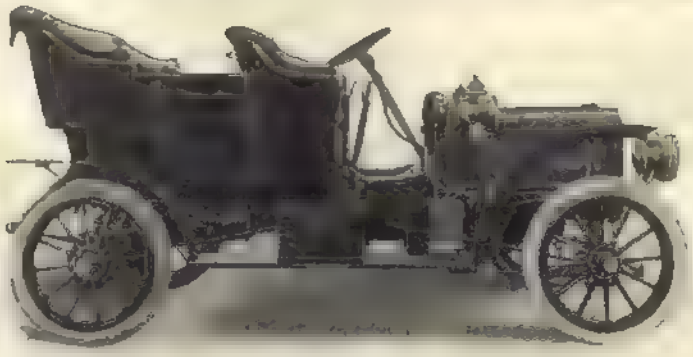
Pope Motor Car Co.

A.L.A.M. **TOLEDO, O.**

POPE Toledo AUTOMOBILES

Moline



24 H. P.	**Model S**	**$2000.**
35 H. P.	**Model A**	**$2500.**

MODELS A and S are built on the same general plan,—Model S being slightly smaller. Each is a big roomy, five passenger touring car, extremely attractive at the price of $2500 and $2000. They have a quiet and smooth-running motor, a transmission that is perfectly satisfactory, flexible clutch action, simple and convenient control, with exceptional easy-riding qualities. The complete machine is in perfect proportion, giving the maximum of pleasure and comfort to the passengers, and the minimum of care and work to the driver.

We Invite an Exhaustive Investigation

In addition to these two models, we offer MODEL C, 20 H. P., $1800, an unusually racy-looking Gentleman's Roadster, seating two or three persons.

MODEL H, 18 H. P., $1250,—one of the finest-looking two cylinder touring cars on the market. A most rigid inspection of this car is solicited, and long, hard demonstrations will be gladly given.

Agencies in all principal cities, but some good territory still open

Moline Automobile Co.

East Moline, Ill.

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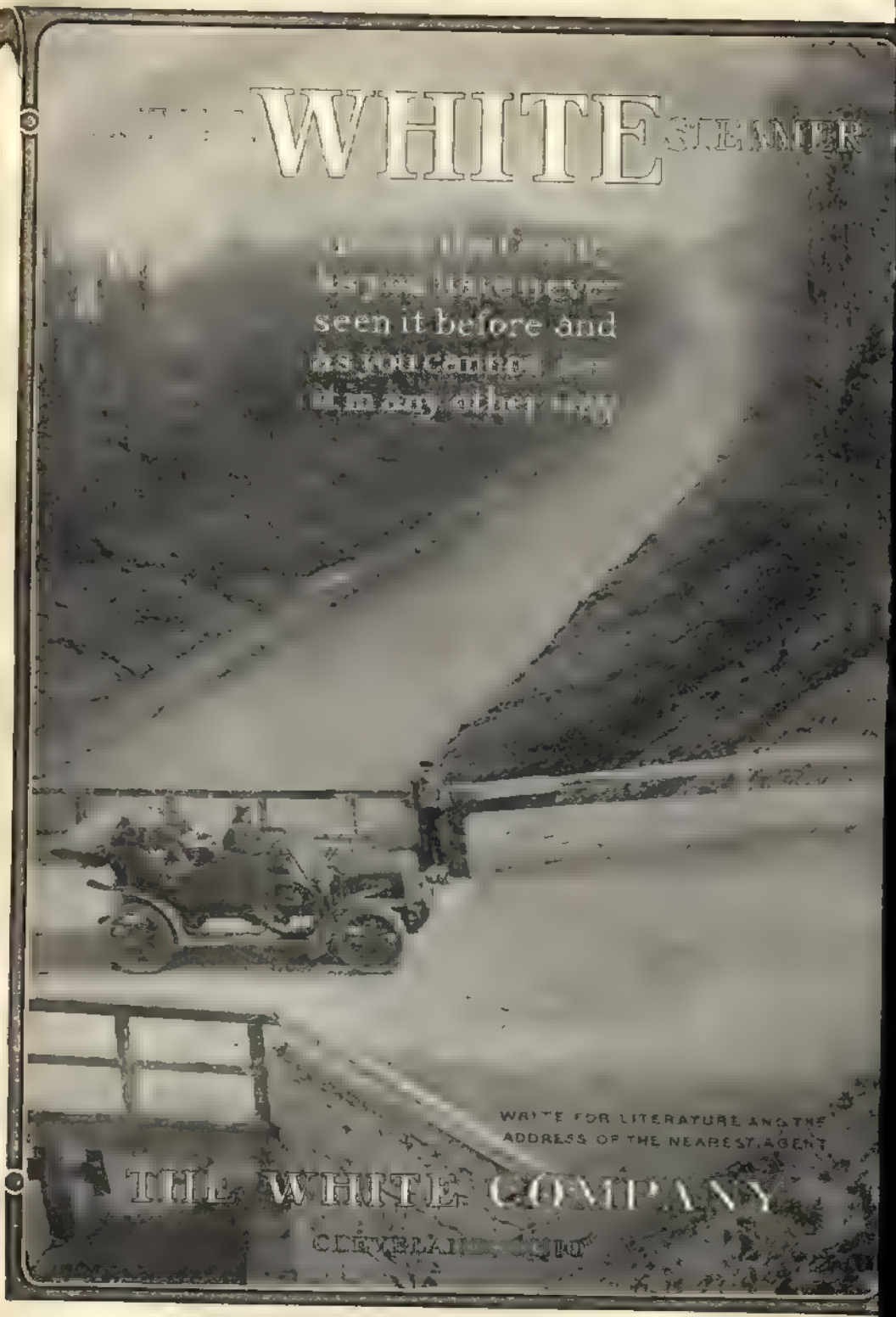
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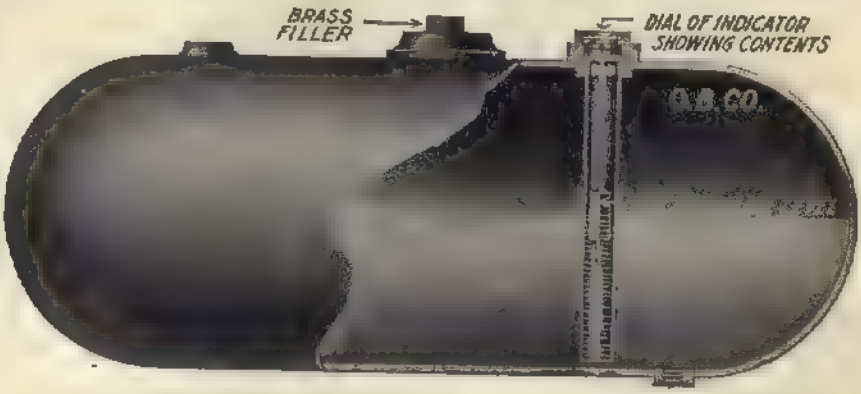
seen it before and
as you can no
many other
WRITE FOR LITERATURE AND THE
ADDRESS OF THE NEAREST AGENT
THE WHITE COMPANY

Seamless Steel Leakless
TANKS for 1908 CARS



A Burning Question! How Much Gasolene in Your Tank? Look at Your Indicator.

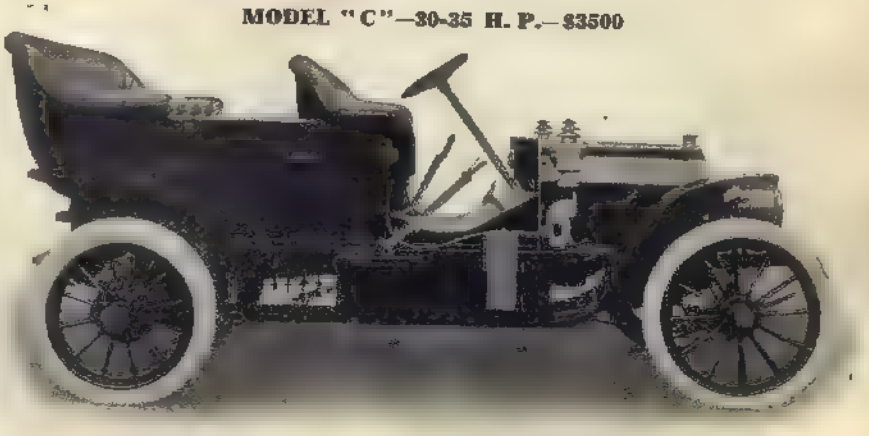
PRESSED STEEL SHAPES AND PRESSURE TANKS

New Trade Catalogue now Ready

JANNEY, STEINMETZ CO., Philadelphia.

Moon 1907

MODEL "C"—30-35 H. P.—$3500



THE Moon Model "C" is a superior car which will be appreciated by experienced buyers. All unnecessary parts have been eliminated, the result is a car of simplicity and strength. It has Drop Frame, Steering ... Control ... Full ... from axle ... Speedometer ... Warner ... Gasoline ... Magneto ... Electric ... Full elliptic rear springs, I beam front axle. ... Honeycomb ... For further particulars write

MOON MOTOR CAR CO., St. Louis, Mo.

Members American Motor Car Manufacturers' Association

USE the Mosler Spit Fire the ONLY PLUGS in the WORLD that ACTUALLY SPIT FIRE

Its Use Proves Its Superiority

USED

By all the leading manufacturers whose absolute reliability is desired
By all who have tried it
Where greatest power is wanted
Where all others have failed
Five thousand miles
Ten thousand miles
Hundreds upon thousands of miles
By thousands of users

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Tool Boxes, Battery Cases, Stands and Luggage Carriers, Idlers, Electric Horns, Lamp Brackets, Cyclemeter Brackets, Pocket Funnels, Etc.

Indian and Yale Motorcycles
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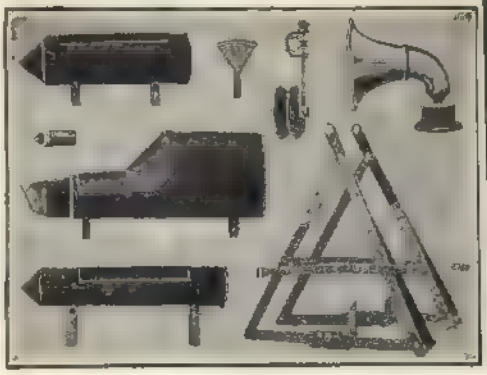

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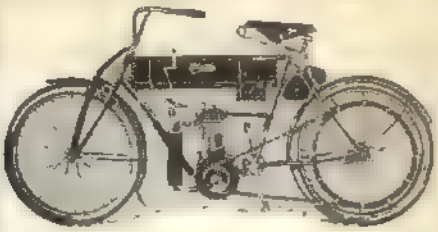

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1907 Single Cylinder

The general purpose machine.

Surplus of power. Easy riding, on account of long wheel base and motor position. Extremely durable. Roller bearing engine. Send for catalogue A, which also describes our double cylinder motorcycle and line of light and powerful motors. Address,

G. H. Curtiss Mfg. Co.
HAMMONDSPORT, N. Y.

GEER GREEN EGG MOTORCYCLE

5 H.P. Two-cylinder

Price $225.00

Liberal discount to dealers.

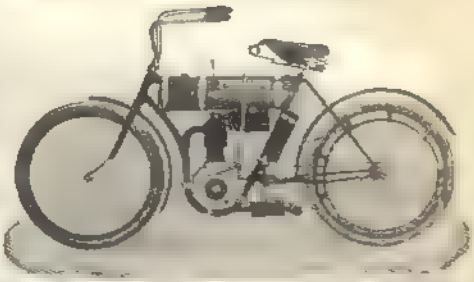
Old machines taken in exchange.

We furnish castings for eight different motors, 1¾ H. P. to 5 H. P., air and water-cooled. Our motor-cycle catalogue is one of the most complete ever issued. Write for copy

SECONDHAND MOTORCYCLES $40.00 UP.

Write for list No. 125 of seventy machines

Harry R. Geer Company,
856 McLaran Ave., St. Louis, Mo.



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Built entirely by us and guaranteed!

THE MERKEL MOTOR CYCLE 1907 MODEL —is the highest *type* of motor cycle construction on the market of today.

With its *Spring Frame* and *Spring Fork* it makes the easiest riding machine you could get.

POWER-SPEED-WEAR-PRICE!

MERKEL MOTOR CO.
1098 26th Avenue : Milwaukee

M. M. 1907

Instant Deliveries

Are what you should be getting at this late date, not promises.

We Are Making Instant Deliveries

To our Agents Hadn't you better place that order you have been keeping your customers waiting weeks for, where you can get

Instant Delivery

Of the best Motor Cycle ever sold, thereby saving your customers further delay and yourself a commission ?

M. M., the machine that has more power, strength, stability, speed, endurance and ease of control than any other Motor Cycle built.

Write For Proposition

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AMERICAN MOTOR COMPANY

715 CENTER STREET

Brockton **Mass.**

New Departure Goods to be Sold Direct

Beginning August 1, the product of the New Departure Manufacturing Company will be sold direct from the home office and salesrooms at Bristol, Conn. The salesmen of the company will travel from Bristol and all orders will be received at and invoiced from the factory.

John H. Graham & Co., of New York, still look after New York city and the downtown export trade.

Mr. DeWitt Page, secretary of the company, will be at the head of the sales department. He retains management of the advertising department.

Automobile Wrenches!

LOOK NO FURTHER!

Write for prices and samples of the **Lightest, Strongest,** most **Serviceable, Tempered Steel Wrenches** ever designed. Address

ONWARD COMPANY,
Formerly E. T. Harris
531 to 551 West 15th St., CHICAGO, ILL.

Clipper Sharpener and Surface Grinder
Profitable in Every Repair Shop
Clippers sharpened in 5 minutes, earning 50 cents. Descriptive circular and prices, address
JOHN VAN BERGHOUTEN
14-20 Catharine St., Poughkeepsie, N. Y.

THE ORIGINAL.
THE SARTUS
Ball Retainer
(Brought Out in 1896)
BEST ANTI-FRICTION
THE SARTUS BALL BEARING CO.
155 Spring Street, NEW YORK CITY

Headquarters for Bicycle and Automobile
Lamps and Generators
AUTOMOBILE SUPPLIES
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Best Motor Cycle Proposition in the world :: :: ::
RELIANCE MOTOR CYCLE CO.
ADDISON, N. Y.

Mesinger "CAVALRY" Motor Saddle

Free action in front suspension strap.

The top is raised in front and back sufficient to prevent the rider from slipping forward or backward, is well padded and has the form of a horseback saddle.

H. & F. MESINGER MFG. CO.
1801-1807 First Avenue New York, U. S. A.

CROUCH MOTORCYCLES
J. W. GRADY & CO.,
Selling Agents,
Worcester, - Mass.

MOTORCYCLE SIDE-CARS
Made to attach to Indian, M-M., Yale and Armac. Does away with that lonely feeling. Prevents falls in snow or mud.
Our stand may save that walk home.
Send for Circular.
R. W. GODDARD CO. Worcester, Mass.

THE A. & J. MANUFACTURING CO.
Sole Manufacturers, **THE ORIGINAL A. & J. Repair Hanger and Braziron.**
The best cast iron brazing compound.
Special motor cycle bracket and hanger for builders.
26 W. Randolph St., Chicago, Ill.

Automobile Supplies and Accessories
Keep us in mind for your next order.
MANUFACTURERS' SUPPLIES CO.
416 Arch St. Philadelphia, Pa.

BRADLEY MOTOR CYCLES
Single and Double Cylinder, $200 and $275
C. E. Bradley Motor Co.
288 Diamond St., Philadelphia, Pa.

A National

Prophecy Fulfilled.

In the fall of 1905, when we brought out the

First Stock Six Cylinder Car,

made in America

We stated in our advertising

THAT IT WAS "An Innovation in Touring Cars."

THAT IT WAS "A car very much ahead of the times."

THAT IT WAS "A car which would be extensively copied in the near future."

Note the number of manufacturers who are NOW building six cylinder cars.

THE 1908 NATIONAL LINE

Model T.	Model R.	Model N.
6 Cyl. 75 H. P.	6 Cyl. 50 H. P.	4 Cyl. 50 H. P.
TOURING CAR,	TOURING CAR,	TOURING CAR,
LIMOUSINE.	LIMOUSINE,	LIMOUSINE,
	ROADSTER.	ROADSTER.

Limousine bodies for National Models F, H and L ready for Immediate Delivery

At the New York Show,
Grand Central Palace, Oct. 24 to 31.

Write for Catalogue and Booklet
"What Owners Say About Their Nationals"

NATIONAL MOTOR VEHICLE CO.

1003 East 22nd St., Indianapolis, Ind.

Member American Motor Car Manufacturers' Association, New York.

Imperial Roadster

The Car With

The Straight Line Drive

30-35 H. P.—36 in. Wheels. Selective Type Transmission—Eisemann Magneto.

Double drop frame. Price, including gas lamps and generator—horn—tools, etc., $2500.00.

Manufactured by the

IMPERIAL MOTOR CAR CO.
Williamsport, Pa., U. S. A.

Members A. M. C. M. A.

We Will Exhibit at the Grand Central Palace October 24th, in Space G.

The National

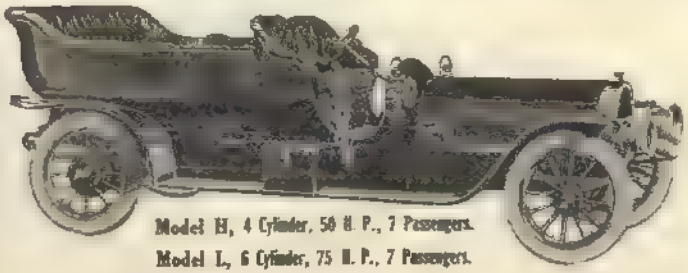
Still Holds the World's Record of 1094 3/16 miles in 24 hours, made on a one mile track, Nov. 1905, by A SINGLE National Stock Car, Demonstrating National Reliability and Endurance.

Many unsuccessful attempts have since been made to break this record. In some of the most recent trials **TWO** or **more** cars of one make have been driven alternately but the total mileage obtained **barely** exceeded the mileage of **one National Car.**

Limousine bodies for National models, E, H and L, ready for immediate delivery.

Write for Catalogue and Booklet

"WHAT OWNERS SAY ABOUT THEIR NATIONALS"



Model H, 4 Cylinder, 50 H. P., 7 Passengers.
Model L, 6 Cylinder, 75 H. P., 7 Passengers.

NATIONAL MOTOR VEHICLE CO.

1003 East 22nd St., Indianapolis, Ind.

Member American Motor Car Manufacturers' Association, New York.

GET READY FOR

1 9 0 8

The sale for Cadillac cars has always been so great that our factory has never been able to fully meet the demand and we have, therefore, not been in a position to take on many new dealers.

We have, however, recently enlarged our manufacturing facilities and shall be in a position to make arrangements with a limited number of new dealers in unoccupied territory.

It is not necessary here to go into details about Cadillac cars. They are the most popular and easiest cars in the world to sell. Their unequaled dependability and economy of operation and maintenance is so universally known that the Cadillac usually receives the first consideration of a prospective purchaser, the question being whether he could get one.

If you are an automobile dealer or expect to take up the business, your success depends upon handling cars that give satisfaction and that you can sell in increased quantities year after year.

Cadillac dealers, as a rule, are the most successful dealers because they can sell more of them than any other and because it takes less effort and less expense to sell a Cadillac.

The line is as follows:

10 H. P. Runabout	**$ 800.00**
10 H. P. Four Passenger Car	**$ 950.00**
10 H. P. Enclosed Coupe	**$1350.00**
20 H. P. Four Cylinder Runabout or Touring Car	**$2000.00**
30 H. P. Four Cylinder Touring Car	**$2500.00**

Now is the time to get ready for 1908 by selling some Cadillacs this Fall and getting trade started which no other car can take away from you.

Cadillac

Cadillac Motor Car Co., Detroit, Mich.

Members of Association Licensed Automobile Manufacturers

WATCH FOR THE ROUND RADIATOR

National

WATCH FOR THE ROUND RADIATOR

The Popularity of the National is Due to Its Consistent and Satisfactory Performance in the Hands of National Owners.

Let us send you our pamphlet
"WHAT OWNERS SAY ABOUT NATIONALS"

Model L, 6-Cyl, 75 H. P.
7 Passengers, $5,000.00.

Model H, 4-Cyl., 50 H. P.
7 Passengers, $3,500.00.

Ball bearing crank shafts and cam shafts, cast aluminum bodies, double ignition (magneto and storage battery) perfect control, ample speed, unexcelled in reliability and endurance.

SOLD BY

Howard & Schultz Co., New York City
Leonard Motor Co., Boston
Ralph Temple Auto Co., Chicago
Tioga Auto Co., Philadelphia
National Motor Car Co., San Francisco
National Auto Co., Los Angeles
F. E. Boland Motor Co., Newark, N. J.
Fisher Auto Co., Indianapolis
Marsh Automobile Co., St. Louis
Hawkes Auto Co., Minneapolis
Liberty Auto Co., Pittsburg
Puget Sound Auto Co., Seattle, Wash.
Sharman Auto Co., Salt Lake City
Auto Supply & Storage Co., Baltimore
Harrisburg Auto Co., Harrisburg, Pa.
Richmond Jewett Co., Grand Rapids
R. E. Jewett Co., Toledo, O.
Superior Auto & Garage Co., W. H. Cincinnati, O.
Automobile Exchange, Birmingham, Ala.
Gate City Motor Car Co., Keokuk, Ia.
C. E. Jewett, Cedar Rapids, Ia.
Geo. J. Boland, Brockton, Mass.

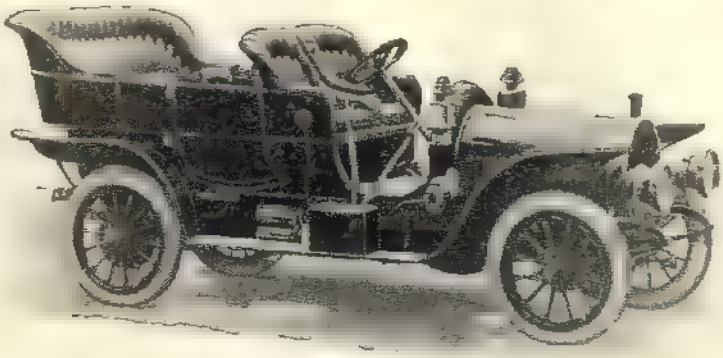
WATCH FOR THE ROUND RADIATOR

NATIONAL MOTOR VEHICLE CO.,
1003 E. 22d Street, Indianapolis, Ind.

Member American Motor Car Manufacturers Association, New York.

WATCH FOR THE ROUND RADIATOR

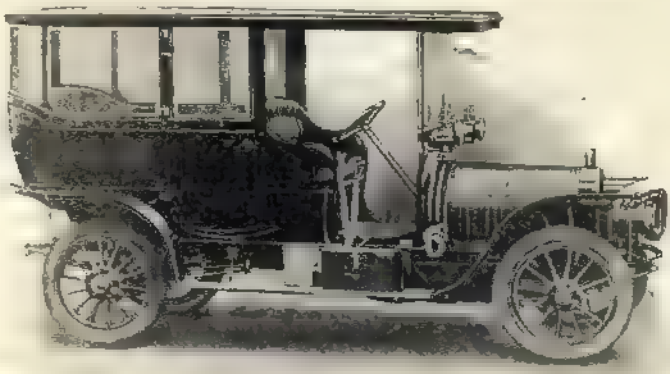
ROYAL TOURIST



1907 MODEL G—SERIES 2

Touring Car, $4,000 **Limousine, $5,000**

Both Seven Passenger and Forty-five Horse power.



Royal Double Ignition System—Royal Carburetor—Royal Fenders—Royal Advanced Improvements.

Our second edition catalogues contain reproductions of photos of all cars and parts with blue prints of every Royal detail. Send for it and learn what is essential to a perfect car.

THE ROYAL MOTOR CAR CO.

CLEVELAND, O.

Member A. L. A. M.

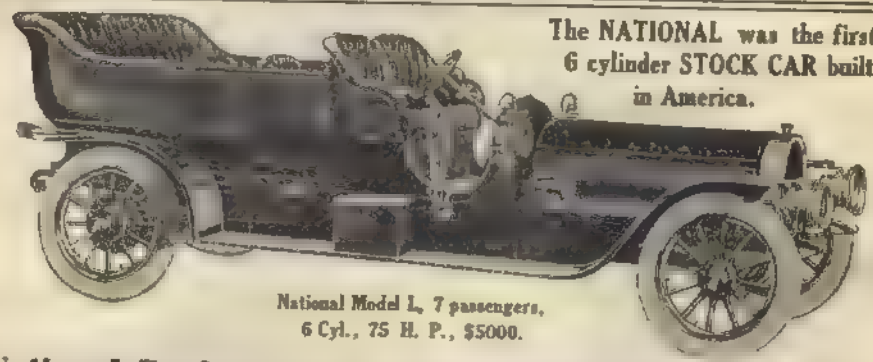
We have some territory still open for reliable agents.

National

RUNABOUTS, TOURING CARS and LIMOUSINES

THE FINEST LINE OF CARS IN AMERICA

Absolutely the Best Value for the Money



The NATIONAL was the first 6 cylinder STOCK CAR built in America.

National Model L, 7 passengers, 6 Cyl., 75 H. P., $5000.

National Engines have ball-bearing crank shafts and ball- bearing cam shafts. Hence their wonderful power.

NATIONAL
MODEL F,
4 cyl., 40 H P.
$3000.
5 passengers.

Is a worthy successor to our Popular Model D of 1906.

National Model H, 4 Cyl., 50 H. P. $3500. 7 passengers.

NATIONAL LIMOUSINES

MODEL L	6 cyl.	75 H P.	$6500.00 9 passengers.
MODEL H,	4 cyl.	50 H P	$3500.00 7 passengers
MODEL F,	4 cyl.	40 H P	$4200.00 7 passengers.

NATIONAL RUNABOUTS

MODEL L,	6 cyl,	75 H P	$5000.00 The first 6 cyl. stock Runabout built in America.
MODEL H,	4 cyl.,	50 H P.	$3500.
MODEL F	4 cyl.,	40 H P	$3000.

SOLD BY

[illegible] New York City
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] Motor Co. Newark, N. J.

National Motor Car Co., San Francisco
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[illegible]

[illegible] Birmingham, Ala.
[illegible] Birmingham, Ala.
Auto Supply & Storage Co., Baltimore
Gate City Motor Car Co., Keokuk, Ia.
[illegible]
[illegible]

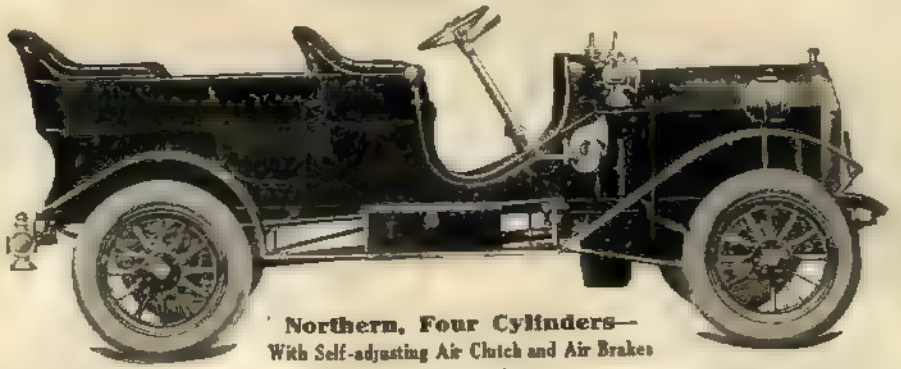
WATCH FOR THE ROUND RADIATOR

NATIONAL MOTOR VEHICLE CO.

1003 E. 22d Street, Indianapolis, Ind.

Member American Motor Car Manufacturers Association, New York

WATCH FOR THE ROUND RADIATOR



Northern, Four Cylinders—
With Self-adjusting Air Clutch and Air Brakes
$3500, F. O. B. Factory

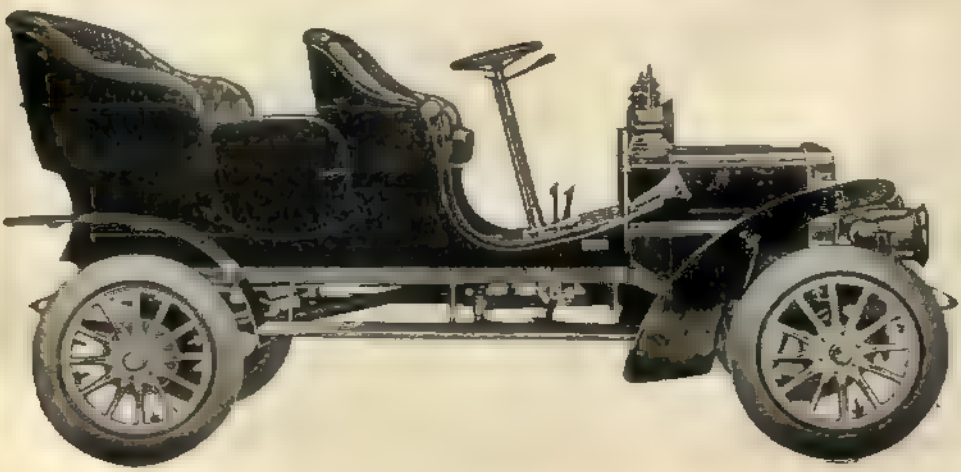
The pleasure of driving a car that is "distinctly different" is added to immeasurably when the car is as much better as it is different.

We equipped our Four Cylinder car with Self-adjusting Air Clutch and Air Brakes because we are convinced—and severe road tests prove it,—that we have secured a more perfect control than is possible by any other plan. No side levers—all speed changes made with one small lever—brakes and everything operated from the steering column. Let us send you the Catalogue that tells all about it.

NORTHERN

MOTOR CAR CO, DETROIT MEMBER A.L.A.M.

The popularity of the Silent Northern is founded on the fact that everywhere and always—it has "made good." The "Northern" Three-point Motor Support not only insures a saving on tires, but a saving on the engine and the entire mechanism of the car that greatly increases its life. And our method of placing the Silent, smooth-operating "Northern" motor - and all mechanism—in front under the hood, minimizes vibration resulting in a quality of comfort that is distinctly and exclusively "Northern."



National

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Let us send you our pamphlet
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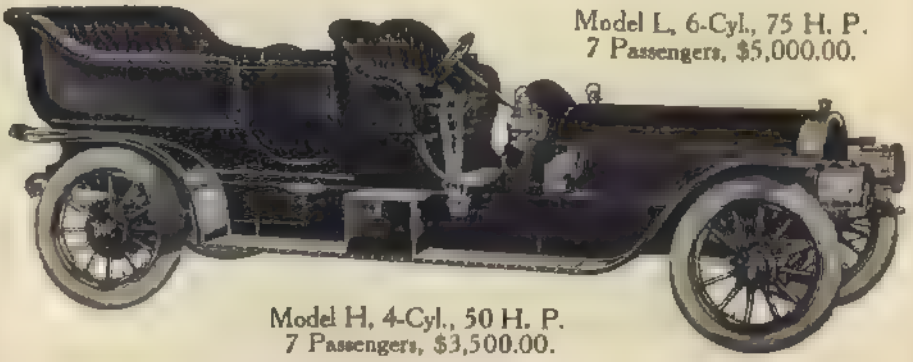

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7 Passengers, $5,000.00.

Model H, 4-Cyl., 50 H. P.
7 Passengers, $3,500.00.

Ball bearing crank shafts and cam shafts, cast aluminum bodies, double ignition (magneto and storage battery) perfect control, ample speed, unexcelled in reliability and endurance.

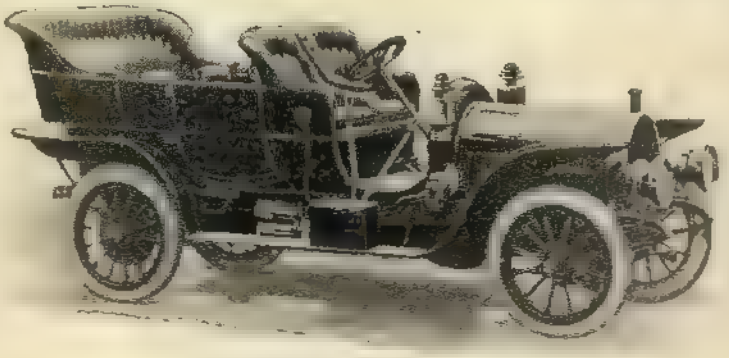
SOLD BY

Horace G. Schaefer & Co., New York City
J. Lee Chamberlain, Boston
Empire Automobile Co., Chicago
Thos. Automobile Co., Philadelphia
National Motor Car Co., San Francisco
National Automobile Co., Los Angeles
F. B. Garland Motor Co., Newark, N. J.
Fisher Auto Co., Indianapolis
Missouri Automobile Co., St. Louis
Hawkes Auto Co., Minneapolis
Liberty Auto Co., Pittsburg
Puget Sound Auto Co., Seattle, Wash.
Sherman Auto Co., Salt Lake City
Auto Supply & Storage Co., Baltimore
Harrisburg Auto Co., Harrisburg, Pa.
Richmond Carriage Co., Grand Rapids
R. F. Bennett & Co., Columbus
Standard Auto & Garage Co., W. H. [illegible]
Automobile Exchange, Birmingham, Ala.
Gate City Motor Car Co., Keokuk, Ia.
C. F. Lovell & Co., Des Moines, Ia.
Geo. J. Donahue, Brockton, Mass.

NATIONAL MOTOR VEHICLE CO.,
1003 E. 22d Street, Indianapolis, Ind.

Member American Motor Car Manufacturers Association, New York.

ROYAL TOURIST



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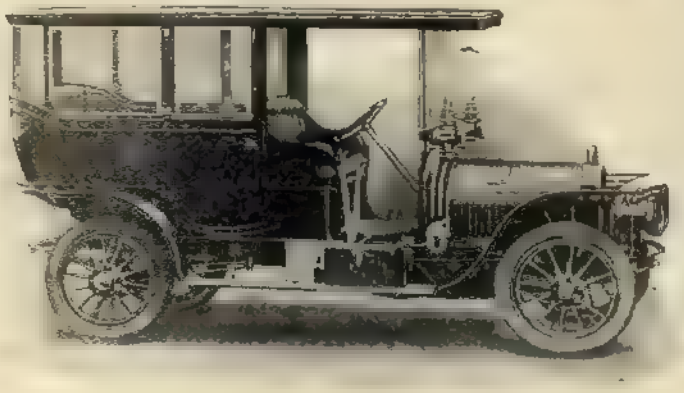

Royal Double Ignition System—Royal Carburetor—Royal Fenders—Royal Advanced Improvements.

Our second edition catalogues contain reproductions of photos of all cars and parts with blue prints of every Royal detail. Send for it and learn what is essential to a perfect car.

THE ROYAL MOTOR CAR CO.

CLEVELAND, O.

Member A. L. A. M.

We have some territory still open for reliable agents.

WATCH FOR THE ROUND RADIATOR

National

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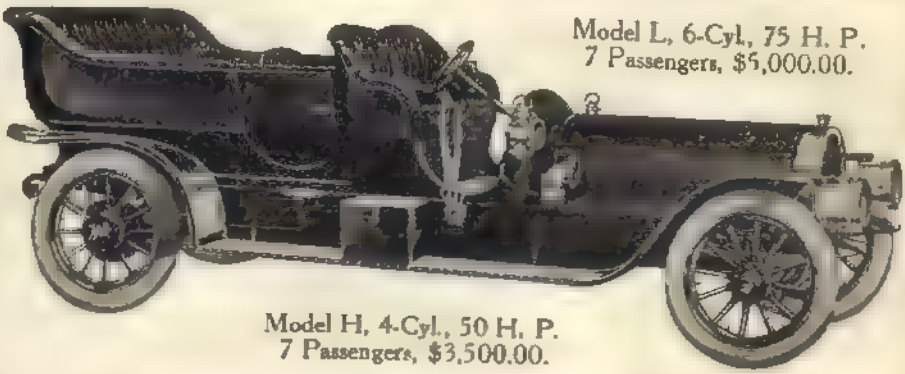

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7 Passengers, $5,000.00.

Model H, 4-Cyl., 50 H. P.
7 Passengers, $3,500.00.

Ball bearing crank shafts and cam shafts, cast aluminum bodies, double ignition (magneto and storage battery) perfect control, ample speed, unexcelled in reliability and endurance.

SOLD BY

Hotman & Schanz Co., New York City
Lloyd M[illegible] Boston
Page Auto Co., Chicago
Tioga Auto Co., Philadelphia
National Motor Car Co., San Francisco
National Auto Co., Los Angeles
P. F. Bohan Motor Co., Newark, N. J.
Fisher Auto Co., [illegible]
Marshall Auto Co., [illegible]
Packard Auto Co., Memphis
Liberty Auto Co., Harrisburg
Page Standard Auto Co., Seattle, Wash.
Sharon Auto Co., Salt Lake City
Auto Supply & Service Co., Sacramento
Harrisburg Auto Co., Harrisburg, Pa.
Richards & Jarvis Co., Grand Rapids
R. [illegible] & Co., Columbus
[illegible] Auto & Garage Co., W. H. Hatch, Albany
Automobile Exchange, Birmingham, Ala.
[illegible] Motor Car Co., Keokuk, Ia.
C. F. Barnett Co., [illegible]
Crew & Donahue, Brockton, Mass.

WATCH FOR THE ROUND RADIATOR

NATIONAL MOTOR VEHICLE CO.,
1003 E. 22d Street, Indianapolis, Ind.

Member American Motor Car Manufacturers Association, New York

WATCH FOR THE ROUND RADIATOR

1893

This was the year of the first Haynes—Model A—the first gasolene "horseless carriage" to be built in America. It was recently acquired by the Smithsonian Institute to illustrate the history of the automobile. Following this pioneer car, was the pioneer automobile factory which has now been continuously producing motor cars for 13 years. Having a long start over all rivals, the Haynes took the leadership in successful invention while others copied its improvements. A multitude of original Haynes inventions have become standard features of the modern automobile, and every car on the market to-day owes tribute for some of its devices to the genius of Elwood Haynes.

THE HAYNES

From 1893 to 1907, we have built Haynes Automobiles and the original leadership in invention has never been lost. To-day the Haynes has more exclusive features of real value than any other car, and will be as it always has been, a model for rivals to imitate. The Haynes of 1907 probably equals other makes for 1908 and 1909. This year we offer the following advanced improvements in all models:

1. *The Haynes exclusive patented sprocket-and-roller-pinion direct drive*, solving satisfactorily the old problems of rear-axle strains and doing away with side chains even on the 50 H. P. Model which is the highest powered shaft-driven car built.

2. *The Haynes exclusive positive cooling system.*

3. *The Haynes exclusive slow-wearing universal joints.*

4. *The Haynes exclusive Master clutch* with metal faces (no leather to renew), taking hold without jerking.

5. *The Haynes exclusive transmission* that allows instant change of gear without releasing the clutch—one movement of the hand and no possibility of burring or stripping the gears.

6. *Roller-bearing engines*—roller bearings, in fact, all along the power route from piston stroke to hub.

Besides these, the Haynes has practically every other feature now included in other cars of any price which is *genuinely* valuable and desirable

For catalogue address desk G 15.

HAYNES AUTOMOBILE CO.

Kokomo, Ind.

Oldest automobile manufacturers in America. Members A. L. A. M.

New York
1715 Broadway

Chicago
1420 Michigan Ave.

1907

This is the year of the latest Haynes Models S and T.

Both are cars of perfected simplicity—strong and reliable in every part and not liable to much improvement in the future. Model T is 50 H. P., 4 cylinders, seats 7. Costs $3,500.

Model S (shown below) is 30 H.P., 4 cylinders, seats 5. Costs $2,600.

Beautiful runabout bodies on either chassis to order.

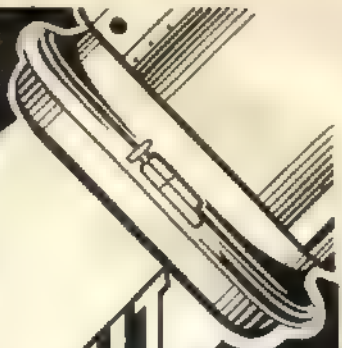
It was a Haynes 1907 stock car which represented America in the Vanderbilt Cup Race. In both the Elimination Trials and final contest against special constructions of twice its horse power, it made an excellent showing and demonstrated absolute reliability under what was the severest endurance test ever made in this country.

NEW

Neverout

TRADE MARK

IDEA



DOUBLE FOCUS SEARCHLIGHT

Twice as Powerful as the Old Fashioned kind.

(Patent applied for.)

While it can be attached to any gas producer or tank, the gas is best produced by the Neverout Patent Invertible Safety Gas Producer.

Write for free booklet describing both Double Focus Searchlight and Safety Gas Producer.

Rose Manufacturing Company

911 Arch St. Philadelphia, U. S. A.

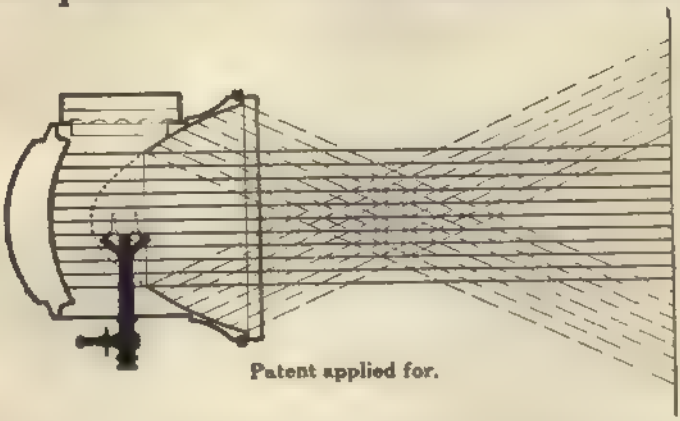
NEW Neverout IDEA

TRADE MARK

Double Focus Searchlight

Two Gas Flames **Two Reflectors**

Twice as powerful as the old-fashioned searchlight



Patent applied for.

DESCRIPTION.—The heavy horizontal lines show the powerfu parallel rays Projected from the forward flame by the Mirror Lens Reflector.

The oblique dotted lines show the diffused rays projected from the rear flame by the forward flange reflector, which is of specia. construction.

The result is long parallel rays or searchlight effect in combination with the wide angle light in one projector. **Enables the automobilist to see the road far ahead and immediately in front of car at the same time.**

The New Neverout Double Focus Searchlight is guaranteed to be the most powerful Automobile searchlight ever produced. Sold on 30 days' trial.

While it can be attached to any gas container or tank, the gas is best produced by the **Neverout Patent Invertible Safety Gas Producer.**

Write for free booklet describing both Double Focus Searchlight and Safety Gas Producer.

Rose Manufacturing Company,
911 Arch Street,
Philadelphia, U. S. A.

Type 27 Double Cylinder.

The Neverout

TRADE MARK

New Idea

two Horns and two reflectors.

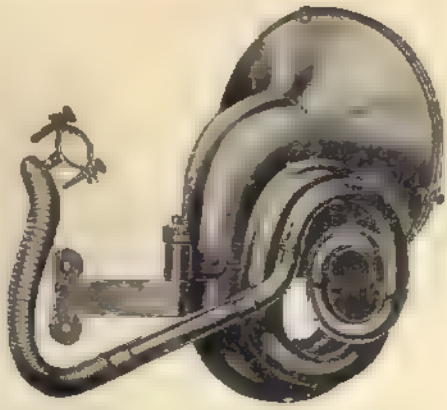
at the wheel" a full view of everything far

Safety Gas Products.

Patents applied for

Rose Mfg. Co.

Twice as
Powerful
As the Old Fashioned Kind
The Neverout
Double Focus Searchlight
(Patent applied for)
The Neverout
Patent Invertible Safety Gas Producer
Makes the whitest gas flame possible
No gas under pressure
No danger of explosion
Universally acknowledged the best
Write for Booklet
ROSE MANUFACTURING CO.
911 Arch St., Philadelphia, Pa.



NONPAREIL

Ten Styles of Horns.

We do not consider Importers as competitors any longer, for the fact that we enjoy the patronage of two-thirds of the Automobile Manufacturers and all the leading Jobbers.

Our success is due to the absolute perfection of our Horns, which for tone, quality and finish are unsurpassed.

Beware of Cheap Imitations

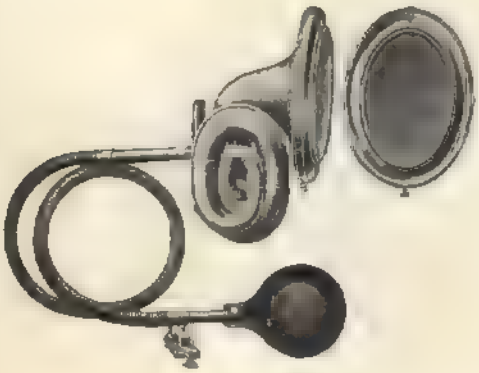
Don't be fooled by getting Horns offered as **"JUST AS GOOD"**

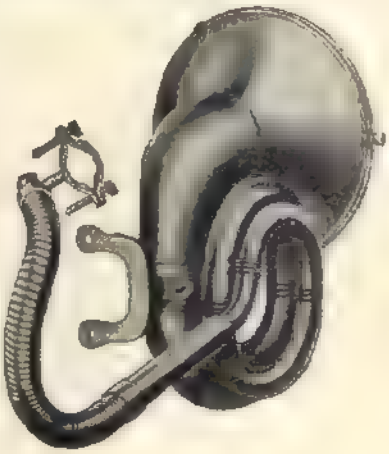
GET THE BEST.

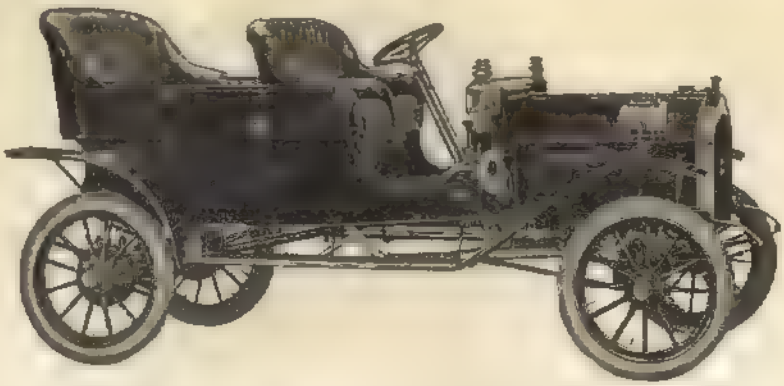
Ask for NONPAREIL HORNS.

SEND FOR CATALOGUE.

AUTOMOBILE SUPPLY MFG. CO., 139 to 147 Emerson Place, Brooklyn, N. Y







The Silent Northern 24.2 H. P. (A. L. A. M. rating) $1600

f. o. b. factory—includes full gas and oil lamp equipment.

For 1908 the Silent Northern embodies the same strong, enduring construction that has given it supremacy for five successive years, plus *MORE POWER*, due to large cylinders, larger valves and other refinements. Five years experience manufacturing this one type insures perfection in every detail.

¶ Style, efficiency, reliability, quietness the conspicuous features. As you are in search of these qualities any comparison you may make ***must*** confirm the fact that this is the greatest value the automobile world affords.

¶ Perfectly balanced motor — *the quietest, smoothest-operating*, simplest automobile engine made—supported at three points—the "Northern way." The mechanism cannot get out of alignment no matter how difficult the roads.

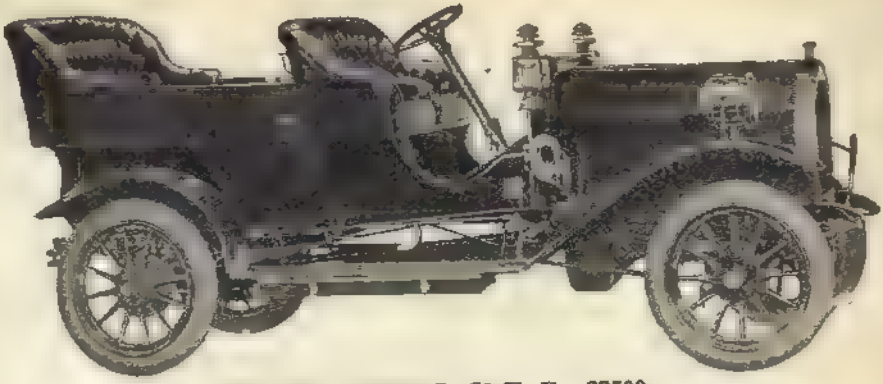
¶ Every part accessible and every part protected. Full control on steering column.

¶ Each detail of construction thoroughly tested out and successful. No guess work—no experiments. This car will prove for ***you*** as it has for others— a genuine money-saver—and give you every comfort and pleasure possible to get from any machine regardless of price. Investigate. Find out for yourself. Send for the Catalogue.

NORTHERN

MOTOR CAR CO., DETROIT

Member A. L. A. M.



Northern, Model L, 50 H. P.—$3500

"FIVE YEARS AHEAD"

Don't wait for others to catch up—buy a "Northern" Air Controlled car **now.** "Five years ahead" is the situation you cannot beat. "Five years ahead" in comfort—in security—in reliability—in ease of control—in style—and in simplicity of mechanism.

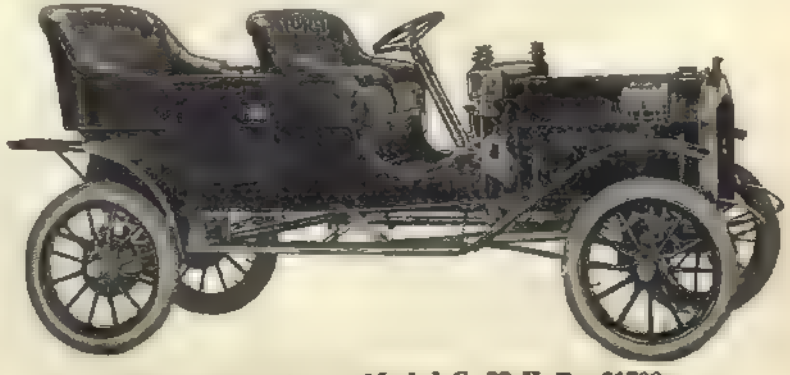
The way to fully appreciate the advantages of "Northern" Air Control is to get a **"Northern"** demonstration. In the meantime get a **"Northern"** catalog. It sheds light—clear, bright and penetrating on the car you must have if you want the most for your money. It's worth getting—get it.

NORTHERN

MOTOR CAR CO., DETROIT

Neat, roomy, speedy—and the quietest thing on wheels, bar none—that's the Silent Northern. Its double opposed motor is the smoothest ever turned out—and more power than ever. Its three-point motor support prevents twisting or straining of mechanism—keeps it in perfect alignment regardless of road conditions. Its straight line body is a beauty. Its full elliptic springs and long wheel base assure easy riding.

Its reputation—growing steadily for four years—is clean, honorable and inspiring to the man of moderate means. Send for the catalog and get **all** the **facts.**



Silent Northern, Model C, 22 H. P.—$1700

Member Association Licensed Automobile Manufacturers.

Thomas Success in the Glidden Tour

Is Best Summarized in the Words of Another Conteatant—

"The Thomas Cars Were Moving All the Time."

No stops for repairs. No halts for mechanical adjustments. No waiting on mountains until the motors cooled off or until the passengers could conclude a frantic search for wayside wells.

In the 1570 miles of gruelling running but six punctures, all from nails scattered in the roadway, occurred on three cars, two in competition and one an official and press car.

"The Thomas Cars were moving all the time."

That statement tells in a few words of the greatest record ever made in an endurance contest. More than that, it presents the ideal condition demanded by the business man to whom delays mean dollars—by the tourist to whom delays spoil a day's pleasure.

Some Glidden Tour Thomas Flyer Facts—

Not a hood was raised on a Thomas Flyer either during the tour or on the return home overland.

But three quarts of water were used in three cars.

Not a Thomas radiator steamed.

Not an involuntary stop was made during the entire tour.

Not a spare part was carried and never was one needed.

Thomas cars always ran on their own power. Never even with seven people and their baggage on board was it necessary to use horses to get through the terrible mud holes.

Notwithstanding its heavy load one Thomas pulled a car of another make over the last two miles of a mountain between Pittsburg and Bedford.

Not a mechanical adjustment was made.

By steady consistent running a Thomas was first in Chicago with over two hours to spare.

A Thomas was first in Indianapolis

Two Thomas Cars were first into Bedford Springs, taking the place of the pacemaker.

A Thomas was first in Baltimore.

A Thomas was first in Philadelphia.

A Thomas was first in New York and first at the finish line.

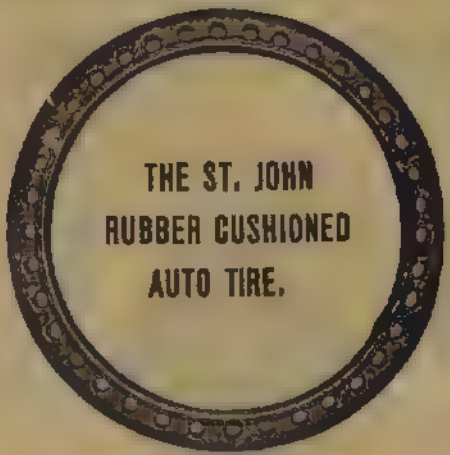
At the conclusion of the tour at New York the Thomas cars ran overland to Buffalo while other cars that had taken part in the tour were shipped home.

And in the allotment of all the honors of the tour for sturdiness, reliability, strength and stand-up qualities all that makes the **one** desired car—none equaled or approached the inspiring and triumphant record of the Thomas.

E. R. THOMAS MOTOR CO.

BUFFALO, NEW YORK.

Member A. L. A. M.



28 x 2½" Runabout Tire.

THE HAPPY MEDIUM

The Greatest Tire Man's Ingenuity Ever Produced.

The tire that solves the vexing problem now presented to owners of automobiles, i. e.: Tire Troubles, Cannot Puncture, Perfect Resiliency, Saves one-third the power now used with other tires. Fits Single or Clincher Rims and easily applied. Adopt our Tire, save annoyance and expense.

We have customers who equipped their machines over two years ago, and the Tires are still in good condition.

ST. JOHN RUBBER TIRE CO., Inc.

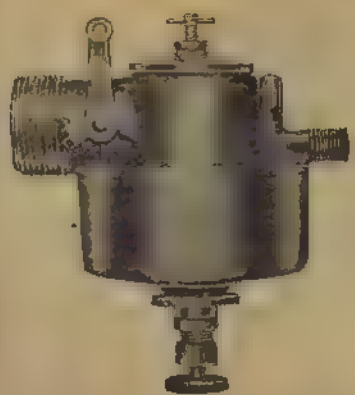
Automobile and Cycle Tire Mfrs. **116 BROAD ST., NEW YORK**

AGENCIES

Philadelphia, Pa., G. W. Nock, 126 N. 4th St.
Washington, D. C., H. T. Jones & Co., 502 E St., N. W.
San Francisco, Cal., E. N. Percy, 367 Clay St.
Boston, Mass., G. W. Knowlton Rubber Co., 88 Broad Street.
Buffalo, Buffalo Mill Supply Co., 210 Main St.
Detroit, Mich., Auto Accessories Co., 265 Jefferson Avenue.

IF THE BEST IN CASTINGS IS NONE TOO GOOD FOR YOU, WRITE OBERDORFER.

The Oberdorfer Carburetor



Gasoline Engine builders and Automobile and Motor Boat manufacturers will be interested in our new carburetor because it combines efficiency and economy.

Very light; has a float valve which may be cleaned without disturbing other parts and which is held on seat by its own weight combined with the weight of the gasoline above it. This insures freedom from leaks.

SIMPLICITY EFFICIENCY ECONOMY

Get a circular. Write to-day.

M. L. OBERDORFER BRASS CO.

FORMAN ST., SYRACUSE, N. Y.

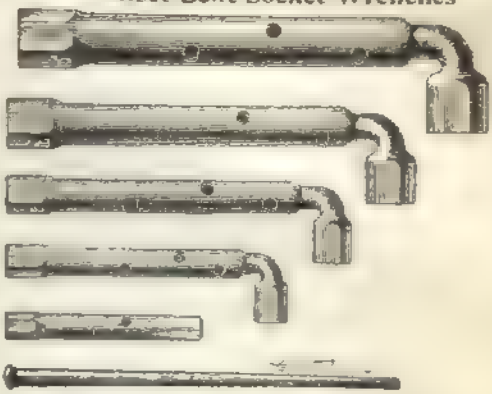
A FEW OF OUR SPECIALTIES

The "Hill" Valve Spring Lifter

This Tool is designed to facilitate the Removal and Replacement of Valve Springs, and is fitted with three fulcrum screws of various lengths, so as to suit all makes of engines.

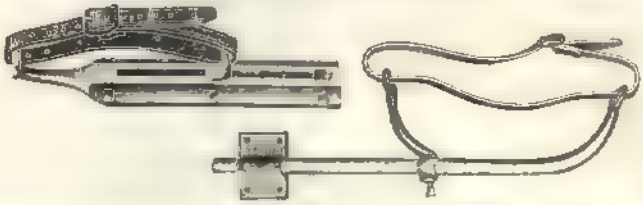
Invaluable to repair men desiring to grind in the valves on motors. Price, including three screws, $1.50.

Offset Bent Socket Wrenches



Set C Consists of four pieces and lever handle. Will fit five standard sizes of hexagon nuts. Price, $5.00. Set D—Consists of five pieces and lever handle. Price $6.00

Simplex Adjustable Tire Holders



Consists of a set of three pieces—two side pieces for attaching to the body of the car, and one bottom bracket to be attached to running board. Can be adjusted to hold from one to three tires. The length can also be adjusted from three to twelve inches at reverse end of bracket. All parts are made of extra heavy, non breakable steel with highly polished brass finish and equipped with strong straps for holding tires. Price, complete set, $8.00.

Guaranteed Accurate Time Pieces especially designed for use on Automobiles and Motor Boats.

Made of Solid Brass, highly polished, and can be wound, set and regulated without removing from the case. Price, with Porcelain or Silver Dial, $8.00.

Krausz Auto Record

A practicable and convenient Expense and Record Book invaluable to every auto owner. Size 4½ x 6¾ in.

Price, with Flexible Leather Cover, $1.00.
" " Special Cloth Cover, 60c.

THE MOTOR CAR EQUIPMENT COMPANY

Manufacturers, Importers and Distributors of AUTOMOBILE ACCESSORIES Main Office and Warerooms 55 WARREN STREET, NEW YORK

Our complete 128 page catalogue will be mailed free, upon request.

The "OLD NICK"
IS AFTER YOUR
CARBURETOR
BUSINESS

The "Old Nick" Carburetor is unique in that it enables you to use various kinds of fuel on any make engine, and gives increased power, ease of control and flexibility of operation. It is equally adapted to the use of gasoline or alcohol. It will work in all positions, except upside down.

The "Old Nick" is scientifically constructed, mechanically made and perfect in operation.

Try it, if you want carburetor satisfaction.

PIONEER BRASS WORKS,
424 S. PENNA. ST., INDIANAPOLIS, IND.

CASTINGS

for

Motor Cycles AUTOMOBILES Motor Boats

ALUMINUM BRASS
PARSONS MANGANESE BRONZE
"Superior" Babbitt "Plata" White Brass

25 years experience means you get
What you want.
How you want it.
When you want it.

Large and fully equipped machine shop for finishing and partly finishing castings.

LET US TALK IT OVER

Clum & Atkinson

ROCHESTER, N. Y.

BALDWIN IMPROVED DETACHABLE CHAIN

Detachable at each link. As serviceable as a Riveted Chain
Cannot become detached by accident
Made with accuracy and care of the best selected material.
Prices the same as other Chain. Made in all sizes.

Makers of all kinds of Sprockets for samples and in large quantities. Send for quotations.

BALDWIN CHAIN & MFG. CO., 200 Chandler St., Worcester, Mass.

H. V. Greenwood, 166 Lake St., Chicago, Ill.
H. D. Simmons 1717 Broadway New York N. Y. } Agents.

DORRIS

1908 MODEL C TOURING CAR

30 H. P.—SELECTIVE TYPE TRANSMISSION
VALVES IN HEAD THREE POINT SUSPENSION
PLATFORM SPRINGS 106″ WHEEL BASE
MULTIPLE DISC CLUTCH

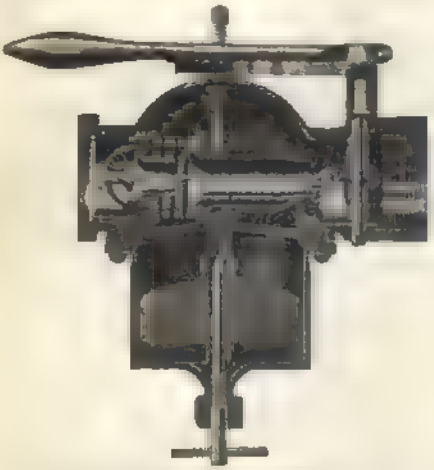
PRICE $2500, Including Lamps, Horns, Etc.

DORRIS MOTOR CAR CO., St. Louis, Mo.

The "Old Nick" Carburetor

The "Old Nick" is the product of the Pioneer Brass Works, 424 South Pennsylvania street, Indianapolis, Ind., who claim it to be equally adapted for use with either gasoline or alcohol, or even coal oil.

It is of the float feed type, and can be placed in all positions except upside down. Vaporization is effected by means of a double volume of air, one coming thru the center of a circle and the other over the outside, meeting at the point of the spray nozzle,



The "Old Nick" Carburetor, Sectional View

where the vaporization takes place. The carburetor is made in ⅜, ¾, 1, 1¼, 1½ and 2-inch sizes, for 1 to 6 cylinders, and lists at $9, $10, $12, $15 $20 and $25 respectively

They also make a special carburetor, finished inside and out and made vertical, and known as the "Old Knick" Special. It is made in 1, 1¼ and 1½ inch sizes and lists at $15, $20 and $25 respectively

"Dentzeau's" Automobile License Pads.

George Dentzeau, 896 8th avenue, New York city, is offering to the autoist the "Dentzeau" all-leather license pad, which is claimed to be indestructible

Dentzeau's N. Y. and N. J. Double Pad.

The pads are made of the best quality of patent leather and the best quality of silk thread. The figures are cut by hand from the same leather as the pad and are sewed on with oiled silk thread. The pads are lined with rolled steel.

Dentzeau's N. Y. State Single License Pad.

His single pad lists at $2.00 and the double pad at $4.00. Red Cross pads are listed at $2.00, and spring straps at $3.50 per pair.

The "American" Auto Horn

The accompanying cut shows the latest model of the "American" Auto Horn placed on the market by the International Auto Horn Mfg. Co., 151 East 126th street, New York City. This horn was designed by Mr S. Salvini, the president of the concern, and is the outcome of his long experience in the horn business as well as familiarity with for-

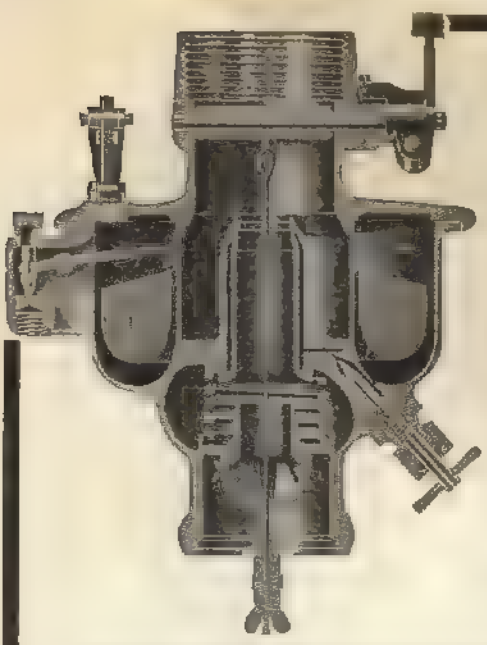
The "American" Auto Horn

eign makes of horns. The International company's plant is equipt with all the latest improvements in the line of tools, machinery and appliances. Their No. 32 horn lists at $4.00 and is fitted with a fine French bulb, reed, fifty-inch flexible air-tight tube and a screen. They guarantee every horn.

The "Champion" Automobile Jack

Patterson, Gottfried & Hunter, Ltd., 146-150 Center street, New York city, have brought out a new style of Champion jack which is illustrated herewith.

The fundamental principle of this jack is in the turn buckle, the right hand thread running thru one end and the left hand thread thru the other, so that when turning the cross bar with the base and top of jack remaining stationary it gives a double lifting motion to the jack. They claim that this is the first time this principle has been applied to a jack for automobiles and that



The "OLD NICK" IS AFTER YOUR CARBURETOR BUSINESS

The **"Old Nick"** Carburetor is unique in that it enables you to use various kinds of fuel on any make engine, and gives increased power, ease of control and flexibility of operation. It is equally adapted to the use of gasoline or alcohol. It will work in all positions, except upside down.

The **"Old Nick"** is scientifically constructed, mechanically made and perfect in operation.

Try it, if you want carburetor satisfaction.

PIONEER BRASS WORKS,

424 S. PENNA. ST., INDIANAPOLIS, IND.

CASTINGS

for

Motor Cycles **AUTOMOBILES** Motor Boats

ALUMINUM **BRASS**

PARSONS MANGANESE BRONZE

"Superior" Babbitt **"Plata" White Brass**

25 years experience means you get

What you want.
How you want it.
When you want it.

Large and fully equipped machine shop for finishing and partly finishing castings.

LET US TALK IT OVER

Clum & Atkinson

ROCHESTER, N. Y.

The ONLY Rims requiring "No Tools but the Hands" are

GOODYEAR

UNIVERSAL RIMS

Fitted with Goodyear

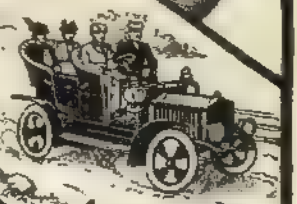
DETACHABLE AUTO TIRES

1.00 pm.

Off and on again in 60 seconds

1.01 pm.

On the road, anywhere, any time of day or night, you can change your Goodyear Detachable Auto-Tire on Goodyear Universal Rim in a minute's time. No tools but the hands. No burglars' jimmys needed. Just loosen one thumbscrew (on the valve stem) and it unlocks the removable flange rings and off comes the tire. Replace the flange rings and tighten the thumb-nut again and the tire is on to stay. No strain which would not tear the wheel to pieces can get it off, till that one thumb-nut is loosened again. We guarantee that Goodyear Detachable Tires on Goodyear Universal Rims can't Rim Cut. Other manufacturers won't replace Rim Cut tires. We do. Will be glad to explain "how" and "why" at our factory or branches:

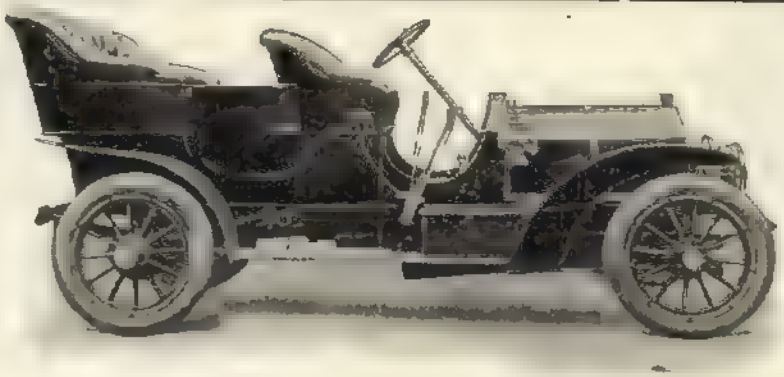


1.02 pm.

BRANCHES: Boston, 961 Dartmouth St. New York, cor. 57th St. and Broadway. Chicago, 1344 Michigan Ave. Cincinnati, 317 E. Fifth St. Buffalo, 719 Main St. St. Louis, 712-714 Morgan St. Los Angeles, 932 S. Main St. San Francisco. Denver, 230 Sixteenth St. Detroit, 246 Jefferson Ave. Philadelphia, 404 Ridge Ave. Cleveland, 326 Franklin Ave. N. W.

The Goodyear Tire & Rubber Co., Warwick St., Akron, O.

SIMPLICITY



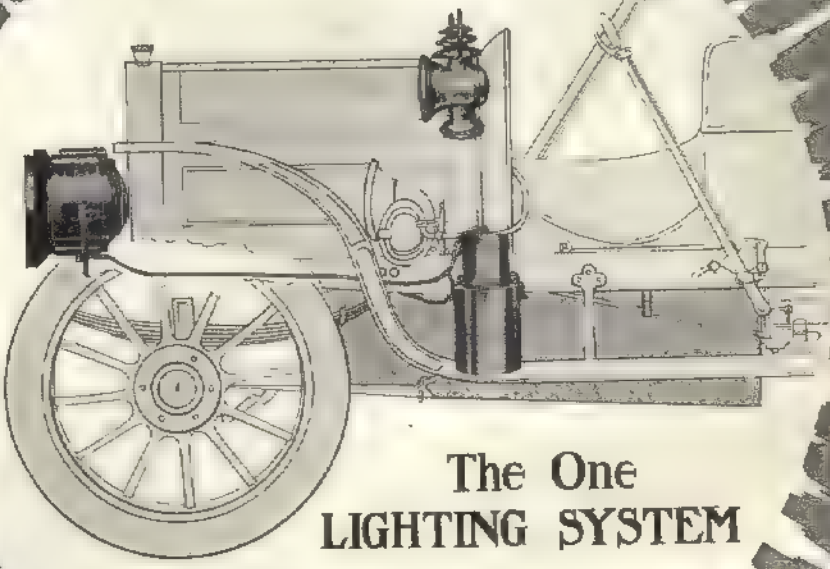
RELIABILITY

MODEL H, 35 H. P., $2,500.00

Motor—Four cylinder, 35 H. P., 4¾ x 6, water cooled, cast in pairs.
Clutch—Multiple disc running in bath of oil.
Transmission—Selective type, three speeds and reverse, no danger of stripping gears. All gears fitted to hexagon shafts not keyed. Transmission fitted with Hess-Bright ball bearings.
Front Axle—I Beam, very strong.
Rear Axle—Bevel gear, floating type, wheels, clutch driven, relieving the driving shaft from all carrying strain.
Frame—Cold rolled pressed steel; steel pan under machinery.
Brakes—Two foot brakes, external, on rear wheels. Two emergency, hand lever internal, on rear wheels.
Lubrication—Positive mechanical.
Color—Dark blue, light blue stripe.
Equipment—3 oil lamps, 2 gas lamps, generator, horn, storage battery and tools.
Tires—32 x 4 Diamond.
Speed—3 to 40 miles on high.
Wheel Base—105 inches.
Price—$2,500, f. o. b. Detroit.

PUNGS-FINCH AUTO CO., Detroit, Mich.

The SOLAR System



The One
LIGHTING SYSTEM
THAT
ALWAYS
WORKS

BADGER BRASS MFG. CO.
KENOSHA, WIS.
EASTERN BRANCH 11th AVE., 36-37 STS. NEW YORK

The "Flemming" Vehicle Chock

The Flemming Automatic Chock Co., 438 Garfield avenue, S. E., Washington, D. C., are manufacturers of the Flemming Vehicle Chock, a device for insuring the safe transportation of automobiles on trains or boats.

The device here shown is made of steel 1-14 of an inch thick, and is 3 feet 6 inches in length by 5½ inches in width, inside measurement. It has one fixt and one movable block of wood; the steel has an angle of 2 inches in width running entirely around the base of the chock formed of the sides and bottom of the chock itself. There are five holes for the lag screws thru these angles properly placed for resistance, and it is thru these that the chock is fastened to the car floor by five lag screws. The screws are

The "Flemming" Vehicle Chock.

placed two on each side and one at end of chock. The mouth of entrance to the chock is so flared as to admit a wheel without the tire touching the side. The upper edges are also flared so as to protect the tire from touching the edge or chafing on the chocks. The movable block has a series of holes thru it ⅜ of an inch apart, which acting with the holes thru the side of the chock are so spaced that every part of an inch can be taken up, thereby snugly fitting any size wheel. They are also cut to fit the arc of the wheel, and beveled at the top to prevent the tire cutting against the block. One chock is placed underneath each wheel, this being done by removing the movable block and backing the machine into the chocks until the wheels mount upon the fixt blocks about ½ inch. The chocks being alike when placed, if the machine is backed into them straight, both wheels will strike the block evenly. The brake is then applied to the machine. The front of the machine is then raised high enough to allow chocks exactly reversed from the rear chocks to be shoved under the front wheels, thus making a cradle of the fixt blocks of the front and rear chocks. A small piece of burlap, or other suitable material, is then wrapt around two of the spokes of each wheel and the latter tied with a ⅝-inch manila rope thru the holes made for the purpose in the sides of the chock. These chocks will accommodate every size tire up to 5½ inches in width. Narrow tire vehicles are placed in the chocks in the same manner and the remaining space necessary to protect the sides from shifting can be filled in by placing of blocks on the sides. For wheels having tires of extreme width, such as sight-seeing autos and heavy delivery wagons, special chocks are made with dimensions accordingly. It is claimed that a machine may be properly loaded and made ready for transportation in this device by one man in ten minutes.

The "Ideal" Fuel and Oil Tank

Ideal Oil Tank Co., Meadville, Pa., are offering the automobile and motor boat trades a storage can or tank for fuels, oils, etc., which is self ventilating. Connected to the faucet is an air tube extending to the top of the tank. When the faucet is opened the air tube is automatically opened by the same operation, thus allowing the entrance of air without unscrewing the filler cap. One turn of the faucet handle opens or closes both the faucet and the air vents. When the faucet is closed the air vent is

The "Ideal" Tank.

closed and the tank is absolutely air tight, hence there is no loss by evaporation.

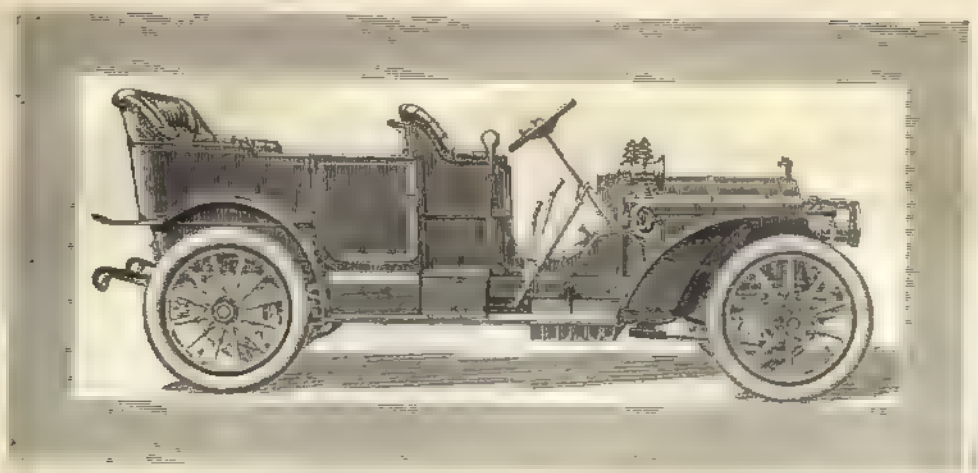
The tank is made of heavy galvanized steel. The bottom is cone-shaped and double seamed and the top is cone-shaped and seamed. All seams are riveted and soldered outside and inside. The one-barrel size is 30 inches high by 26 inches diameter and holds 65 gallons. It is also made in 40, 20, 10 and 5-gallon sizes. For tourists they make odd shaped tanks for carrying a supply of gasoline or oil on the car. These special sizes are made in any shape desired, such as half round, square, oblong, etc., to fit into out-of-the-way places on the car.

"Gereco" Soap

The General Refining Co., 409 American Trust Bldg., Cleveland, Ohio, are offering to the automobile trade "Gereco" Soap. The soap is of special use in cleaning high polished automobile bodies, altho it can be used for anything that requires cleaning. It is guaranteed not to cut varnish, or injure in anyway, the highest polish.

When using "Gereco" for automobiles, about 15 pounds is dissolved in a barrel of water, and a sufficient quantity of this solution used to a pail of water to produce a stiff suds. It is applied with a sponge. The surface is then rinsed thoroly and dried and polished with a soft cloth or chamois.

Mr. L. A. Harris, for five years in charge of the Elephant Battery & Chemical Company, of London, England, and for the past year their American Representative at New York, severed connection with that concern the first of March to engage as salesman with The R. E. Hardy Company.



Packard "THIRTY" 1908

FOR the season of 1908, the Packard Motor Car Company continues its time-tried policy of devoting its great factory to the production of motor cars of one model—a new Packard "Thirty." In its most notable form this is a touring car, and also is furnished as a runabout, limousine and landaulet, or equipped with cape cart or Victoria top. Capable, modish in design and luxurious in appointment, the car is a Packard throughout, with improved detail and refined construction. The price of the touring car, in standard finish and equipment, is $4,200, f. o. b. Detroit.

Packard Motor Car Company

Dept. 11. Detroit, Michigan

NEW 1907 CARS

EIGHT-CYLINDER 50-60 H. P. TOURING CAR

Motor, four cylinders each side 90° apart.
Chassis, $4000.00.

TOWN CAR

Elegantly finished Landaulet or Limousine body.
Complete, $2600.00.

LITTLE TOURING CAR

Especially for professional use.
Substantially built throughout of the highest grade materials.
Price, $1000.00.

THE ONLY AMERICAN CAR TAKEN UP AND MANUFACTURED IN EUROPE.

FIVE-TON GASOLINE TRUCK

Best design of any commercial car in America.
Only the highest grade of materials and the best class of workmanship enter into its construction.
Chassis, $4000.00.

1000-POUND LIGHT DELIVERY

The only LIGHT DELIVERY properly geared for city and suburban service.
Price, complete, $1600.00.

HEWITT MOTOR CO.

6-8-10 E. 31ST ST. · NEW YORK CITY

Packard

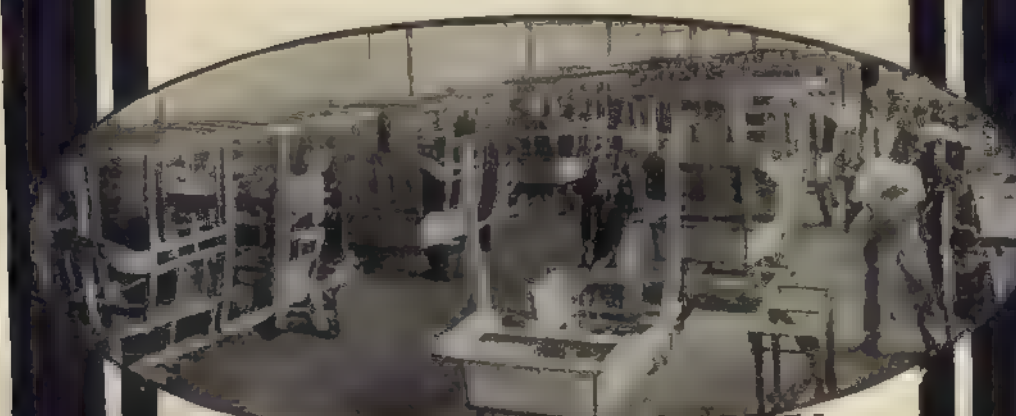
Limousines

A High-class well appointed limousine cannot always be obtained quickly. If a limousine is desired for next fall it should be ordered now.

¶ We are building a limited number of Packard limousine bodies for delivery in June and July. They are interchangeable with the touring body on either Packard "24" or "30" chassis.

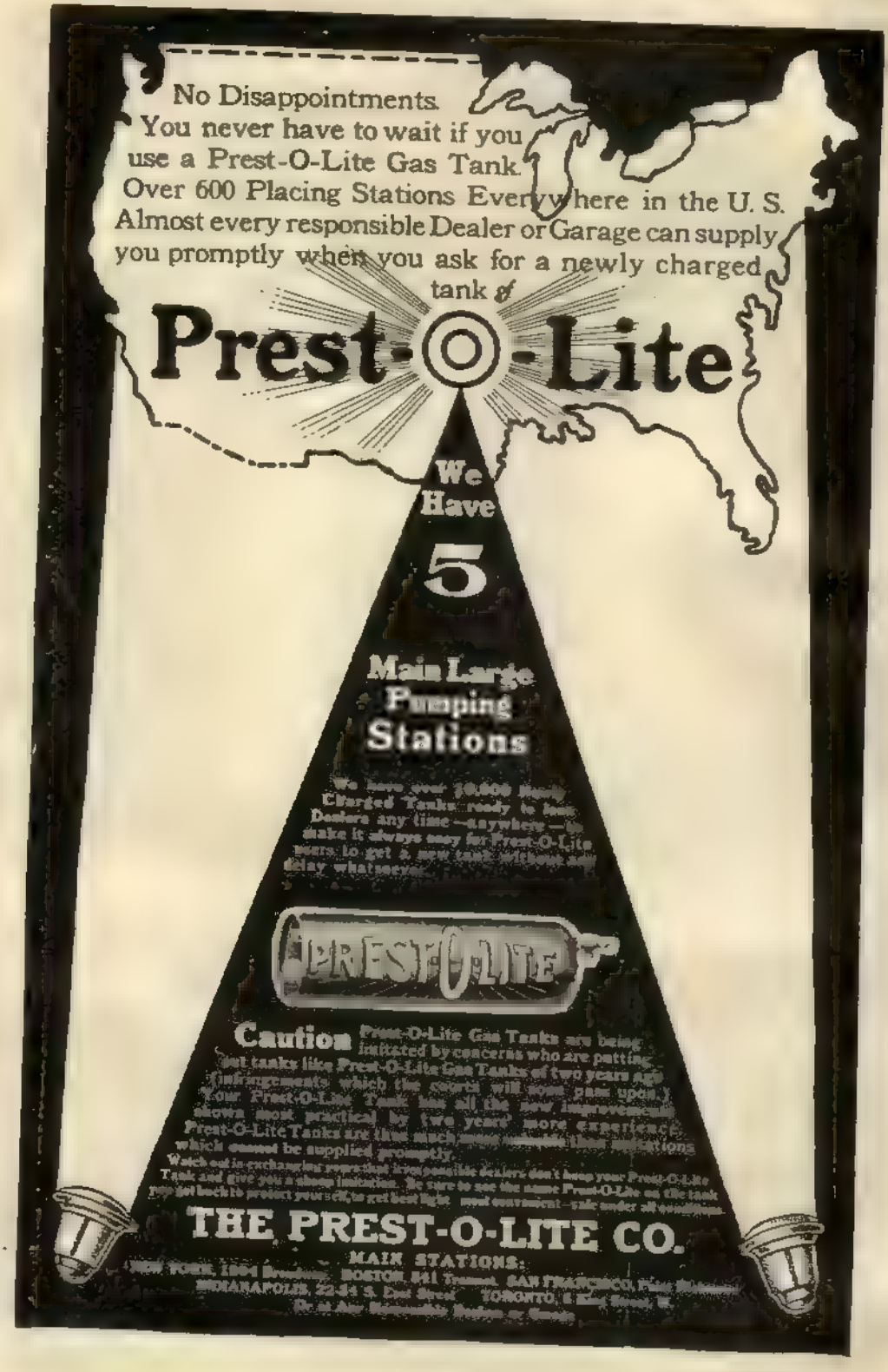
¶ These limousine bodies are of the standard Packard design and are built in one of the largest limousine body-making departments in the country. We have a limousine book which tells all about this department and the limousines made in it. Send for one.

¶ The supply of these limousines is small—the wise plan is to order now



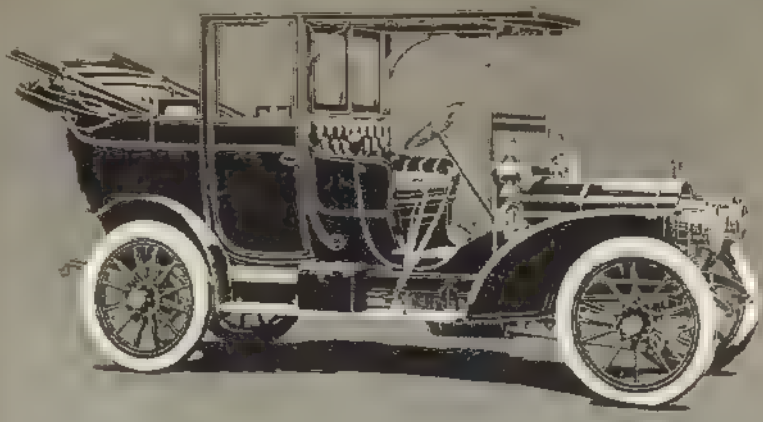
PACKARD MOTOR CAR COMPANY

DETROIT, Dept 11, MICHIGAN.


No Disappointments
You never have to wait if you use a Prest-O-Lite Gas Tank.
Over 600 Placing Stations Everywhere in the U. S.
Almost every responsible Dealer or Garage can supply you promptly when you ask for a newly charged tank of
Prest-O-Lite
We Have
5
Main Large Pumping Stations
PRESTOLITE
Caution
THE PREST-O-LITE CO.
MAIN STATIONS:

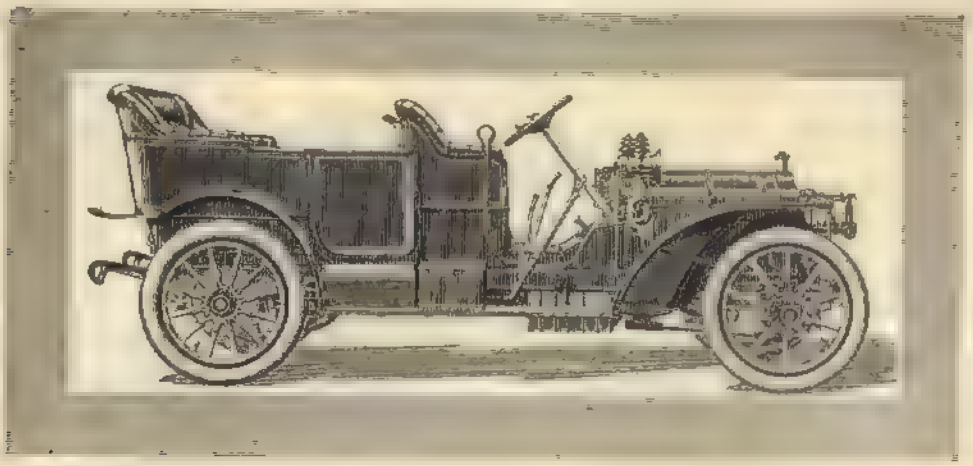
Packard

THIRTY



"Ask the man that owns one"

PACKARD MOTOR CAR COMPANY
DETROIT, MICHIGAN



Packard "THIRTY" 1908

FOR the season of 1908, the Packard Motor Car Company continues its time-tried policy of devoting its great factory to the production of motor cars of one model—a new Packard "Thirty." In its most notable form this is a touring car, and also is furnished as a runabout, limousine and landaulet, or equipped with cape cart or Victoria top. Capable, modish in design and luxurious in appointment, the car is a Packard throughout, with improved detail and refined construction. The price of the touring car, in standard finish and equipment, is $4,200, f. o. b. Detroit.

Packard Motor Car Company

Dept. 11. **Detroit, Michigan**

NEW 1907 CARS

EIGHT-CYLINDER 50-60 H. P. TOURING CAR

Motor, four cylinders each side 90° apart.
Chassis, $4000.00.

TOWN CAR

Elegantly finished Landaulet or Limousine body.
Complete, $2600.00.

LITTLE TOURING CAR

Especially for professional use.
Substantially built throughout of the highest grade materials.
Price, $1000.00.

THE ONLY AMERICAN CAR TAKEN UP AND MANUFACTURED IN EUROPE.

FIVE-TON GASOLINE TRUCK

Best design of any commercial car in America.
Only the highest grade of materials and the best class of workmanship enter into its construction.
Chassis, $4000.00.

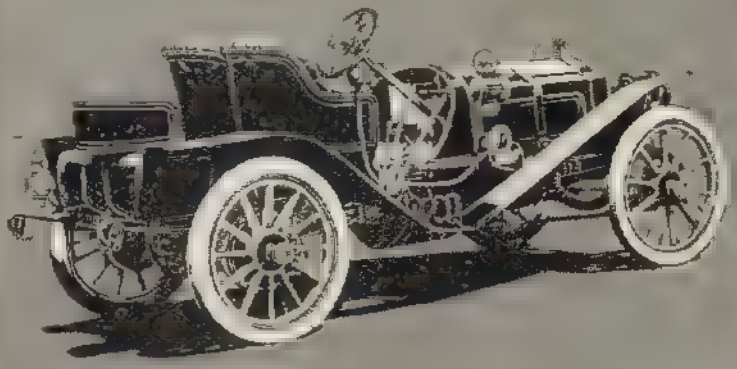
1000-POUND LIGHT DELIVERY

The only LIGHT DELIVERY properly geared for city and suburban service.
Price, complete, $1600.00.

HEWITT MOTOR CO.

6-8-10 E. 31ST ST. NEW YORK CITY

Packard



PACKARD MOTOR CAR COMPANY
DETROIT, MICHIGAN

"PANHARD" CYLINDER OIL

The oil that will not char

A gasolene engine is very sensitive. It is injured easily by poor lubricating oil—especially oil that chars and carbonizes. Paying $4,000 for a car and using cheap and inferior oils that will cripple its motor power is poor economy.

If you'll insist upon getting the best—

then you'll

Insist upon getting

"PANHARD"

The oil in the checker-board can

GEO. A. HAWS

72 Pine Street

New York

THE BEST OIL FOR YOUR ENGINE IS "PANHARD" OIL

"The Oil that will not char."

"PANHARD" OIL is the recognized standard cylinder lubricant. Every impartial dealer will tell you it is the best and most economical because of its superior quality. There are imitations of "Panhard" on the market, so be sure you look for the checkerboard can.

GEO. A. HAWS,
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WIDMER MACHINE WORKS, INC.

Manufacturers of ***GEARS, PARTS, ETC.***

SPECIALTIES, GEARS.

Silent running special "Electroide" filled gears.
Gray fibre filled gears.
Spiral gears, generated.
Planed gears.
Herring bone gears, generated.

STEERING GEARS.

"NEW DEPARTURE" entirely new design, for heavy cars.
"STERLING" especially for trucks.
"LITTLE GIANT" for light cars.

We are prepared to take on high grade machine work; send us your blue prints for quotations.

45-47-49 FORT STREET, EAST - DETROIT, MICHIGAN

"PANHARD"

"PANHARD" OIL

A Move in the Right Direction

The importance of good oil cannot be over estimated. The efficiency of your motor car depends upon perfect cylinder lubrication. The best oil on the market is "PANHARD." This fact is acknowledged by the Automobile Trade in general.

"PANHARD" will not gum the cylinders. Prevents carbon and residue from clogging the piston rings and spark-plugs, and militates against the ruinous effects of pre-ignition.

If you'll
insist upon getting the best
Then you'll
insist upon getting

"PANHARD"

The oil in the checker-board can

GEO. A. HAWS No. 72 Pine Street NEW YORK

A CYLINDER NECESSITY

THE OIL THAT WILL NOT CHAR

THE OIL IN THE CHECKERBOARD CAN

"Western" Spherical Lamps

In designing the "Western" Spherical Lamps, special attention has been paid to producing a lamp which will meet all the requirements of the road, at the same time producing the most powerful light obtainable from acetylene gas.

These lamps are the product of the Western Lamp & Mechanical Works, 835-47 South Los Angeles street, Los Angeles, California, who manufacture them in all sizes for either swing or rigid brackets as may be desired. The illustration shows the lamp with the fitting used for attaching to a curved dash-board. The lamps are constructed thruout of the best material and high-class workmanship, and are put together with rivets and screws, thus making them exceedingly strong and durable and

The "Western" Spherical Lamp.

rendering it impossible for parts or fittings to work loose thru the constant and violent jarring to which lamps are subjected. The casings and fittings are made of heavy yellow brass, highly polished and finished. The front doors are made of heavy polished copper. The best grade of Bausch & Lomb Mangin Mirror Lenses are fitted the front being a perfectly flat polished French plate lense which the manufacturers claim to be superior to any other type.

The Western Spherical lamps are also provided with a special equipment for use in mounting these lamps upon sailing vessels, power craft, launches, etc. The lamps are made in 7, 8½, 10 and 12 inch sizes, listing at $16.00, $19.00, $22.00 and $28.00 respectively, with rigid mounting and at $20.00, $24.00, $27.00 and $35.00 respectively, with swinging bracket.

The manufacturers also make Spherical lamps in sizes from 18 to 36 inches, specially equipt with electric arc lights, to be used where a very powerful light is required for commercial use.

Clover Brand Valve Grinding Compound

The Clover Manufacturing Company, of 228 West Fifty-eighth street, New York, has devised a new form of grinding compound called the Clover Brand. This grinding compound has no emery in it, but is mixed with a heavy consistent cutting oil which does not melt or change its consistency up to temperatures of 125 degrees. It is put up in double cans with a cover on each side, one side containing coarse mixture for starting the operation and the other side containing fine mixture for finishing.

The advantage claimed for the Clover Valve Grinding Compound is that it absolutely remains on the seat while the process of grinding takes place. In addition to this, a small quantity only is needed, which is applied directly to the valve seat, where it remains, no chance whatever being given to the grinding mixture to get down into the working parts.

Another advantage lies in the fact that it may be carried in a tool chest without danger of spilling and getting among the tools, as in the case of powdered emery. The Clover Brand Valve Grinding Compound, altho only recently placed on the market, has already met with great success thruout the country.

"Wallace" Bending Tools

The Wallace Supply Co., 56 Fifth avenue, Chicago, make a line of bending tools for bending metal either in the hot or cold. These machines are of special interest to automobile manufacturers requiring the bending of small parts.

The Angle Bending Tool bends flat stock up to 2 inches wide by ¾ in. thick, and round or square stock up to ¾ inches hot. It bends angle-iron if a "V" shaped piece of stock is cut from one leg and will form any angle from zero to 90 degrees. Angles less than 90 degrees may be made by the use of a special "sharp angle die." Case hardened steel dies are recommended for cold bending. The list price of this bender with regular dies is $20.

Their Eye Bender No. 1, takes stock up to and including ½ inch. It bends rings and eyes up to 2¾ inches, outside diameter. List price of this size with one size forming pin is $25.00. Extra forming pins list at $1.00 each.

The Toledo Auto Parts Mfg. Co, Toledo, Ohio, are making a specialty of machining and assembling various parts of automobiles according to specifications furnished by manufacturers.

"PANHARD" CYLINDER OIL

The oil that will not char

A gasolene engine is very sensitive. It is injured easily by poor lubricating oil—especially oil that chars and carbonizes. Paying $4,000 for a car and using cheap and inferior oils that will cripple its motor power is poor economy.

If you'll insist upon getting the best—

then you'll

Insist upon getting

"PANHARD"

The oil in the checker-board can

GEO. A. HAWS
72 Pine Street
New York

WHAT YOU HAVE BEEN LOOKING FOR

A Four Cylinder TWO CYCLE AIR COOLED MOTOR

In a Light But Strong Racy Looking Car

The PAGE-ADRIAN

with more unique features than any car on the market—Specifications and cuts in next issue—Wait. Also higher powered model.

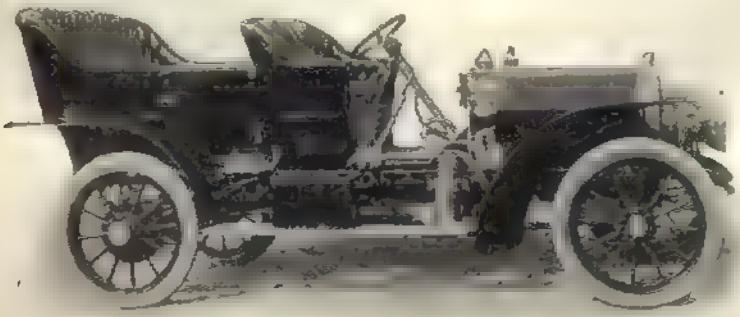
THE PAGE GAS ENGINE CO.

Adrian, Mich.

PENNSYLVANIA

BUILT TO USE.

A carefully constructed motor car for continued use—over our questionable roads—30 H P., 2500 pounds—$2800.00. The mechanical construction and refinement are set forth in a catalogue sent upon request.



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BRYN MAWR, PA.

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with more unique features than any car on the market—Specifications and cuts in next issue—Wait. Also higher powered model.

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A carefully constructed motor car for continued use—over our questionable roads—8½ H. P., 2500 pounds. $285.00. The mechanical construction and refinement are set forth in a catalogue sent upon request.

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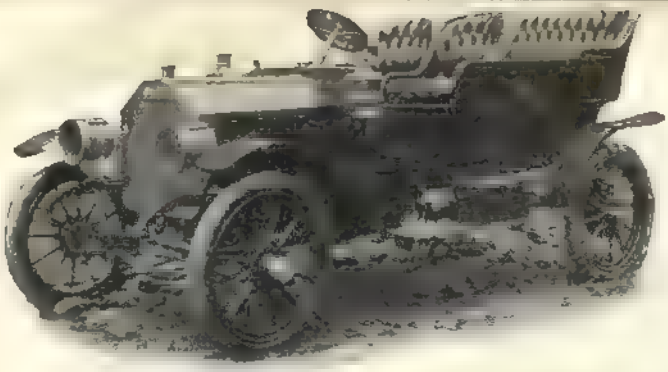

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1907 New Cars.

Everything Latest. Everything Best.

5-Passenger Touring Car, $2250.00 3-Passenger Runabout, same chassis, $2100.00.

110-inch Wheel-base. Tires 32 x 3½ inches. New motor, 4-cylinder, vertical, 4-cycle, water cooled, 30 B. H. P. at 1000 R. P. M. **Blomstrom's Own Design. Latest, Best. New Clutch Blomstrom's Own; Latest, Best.** Selective Sliding Gear on Hess-Bright ball bearings Tempered Nickel Steel Gearing, Bevel Gear Drive, Front Wheels on ball bearings.

Complete Equipment -Mats, Horn, Tools, 5 Lamps, ready for the road.

The Blomstrom 30 is not built merely to get the purchaser's money. It is built to give the buyer satisfaction on the road.

BLOMSTROM MANUFACTURING COMPANY, DETROIT, MICH.

AMERICAN MORS

A CAR BUILT FOR PERMANENCE

The American Mors is to-day conceded to be the height of structural strength combined with compact solidity and correct style.

If a better all around car can be designed and built it remains to be shown to the engineering world.

The best American brains and the best French brains unite in the American Mors.

AMERICAN MORS TOURING CARS—Three Types

14-18 H. P., $3,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All Bodies of the Most Perfect Designs—Complete Equipment

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THE ST. LOUIS CAR COMPANY, Automobile Department, St. Louis, Mo.

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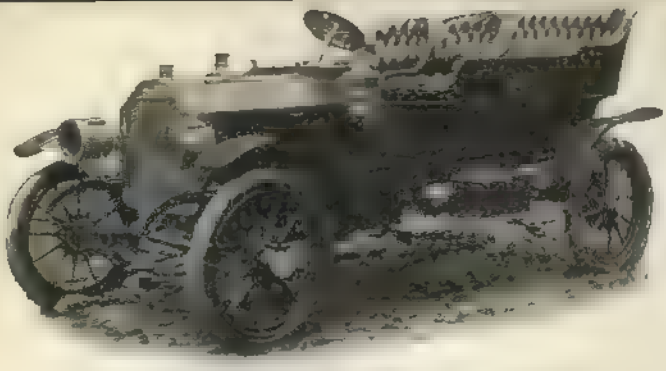

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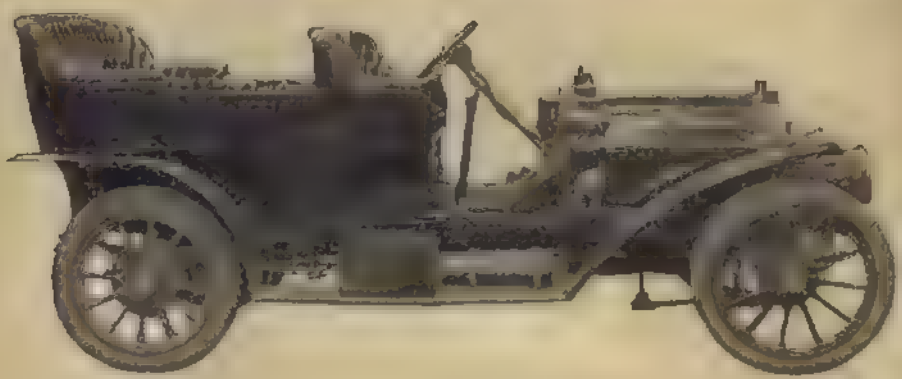
LARGEST BUILDERS OF STREET CARS IN THE WORLD

TYPE C

PENNSYLVANIA

50



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$2800.00

FIFTY H. P.

¶ 4¾ x 5¼ valve in head. Hollow Crank, Eccentric Ring Oiling, Large Bearings, Perfectly Balanced.

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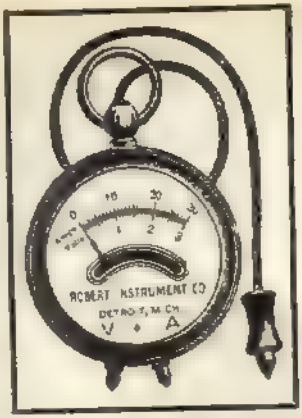

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VOLT METERS
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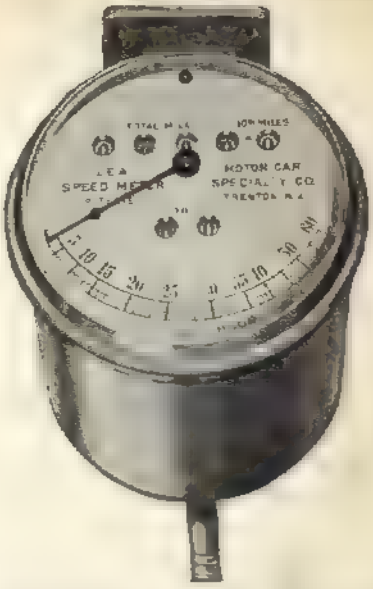

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Not an experiment but the most RELIABLE, DEPENDABLE and MECHANICALLY ACCURATE Instrument built

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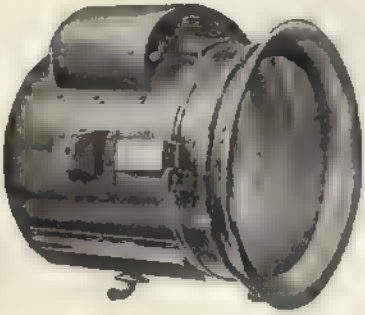

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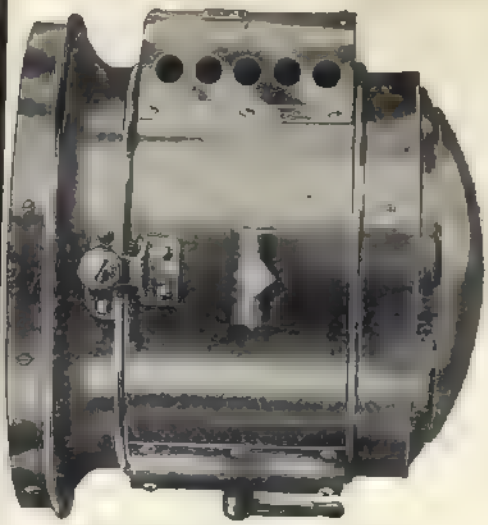

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WHY? Because we produce more light, use better quality material, constructed by mechanics of many years' experience
Pay you to investigate
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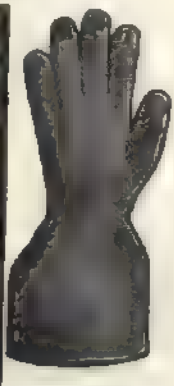

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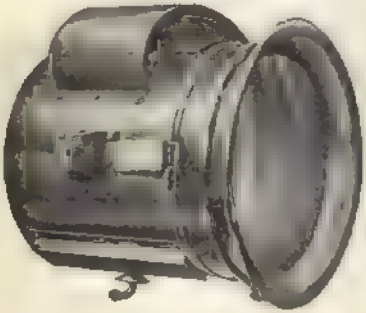

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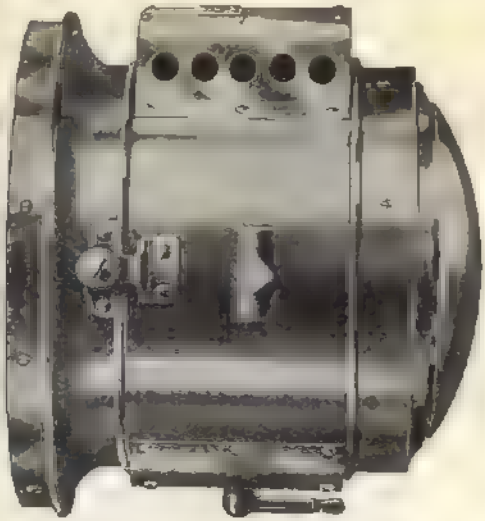

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WHY? Because we produce more light, use better quality material, constructed by mechanics of many years' experience.
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Screw Machine Products

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We can help you as we have helped others. We don't claim to be revolutionizing the battery business, but we give you always a high class product, not sometimes, but always.

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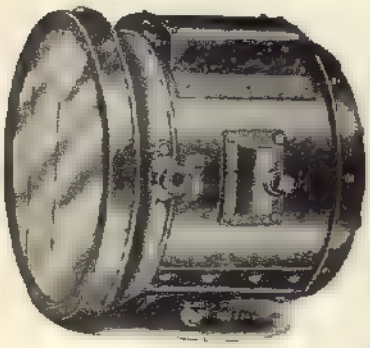

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They are the best of their kind, and if there is anyone in the world who wants the best, it is the Autoist.

Especially when sold at a moderate price, as is the Phoebus.

We also manufacture an excellent line of **AUTO SUNDRIES**, which includes Exhaust Horns, Tire Holders and Extensions, Tire Pumps, Oil Guns, Horn Screens, Flexible Metallic Tubing, etc.

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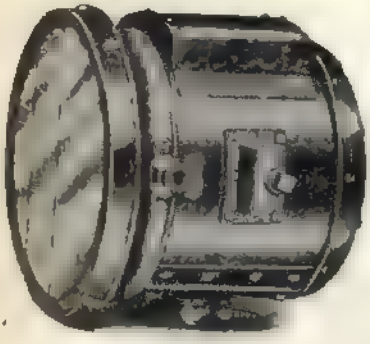

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Made by machinery—every tire is uniform in quality.

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Same price as indifferent makes.

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when you are looking at passing automobiles.

It is the radiator on the "Maxwell."

Notice how perfectly the cars back of this radiator run.

The "Maxwell" is giving perfect satisfaction to over 7,000 owners.

The "Maxwell" was *designed right* to start with—by Mr. J. D. Maxwell—and is *built right* throughout—that's why.

The "Maxwell"

is not a luxury, but a necessity. Its utility is proven by the way it has won endurance contests and mountain climbs, won the Deming Trophy in the Glidden Tour (1906), and the world's 5,000-mile nonstop record.

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President, Maxwell-Briscoe Motor Co.

Dealers in All Large Cities

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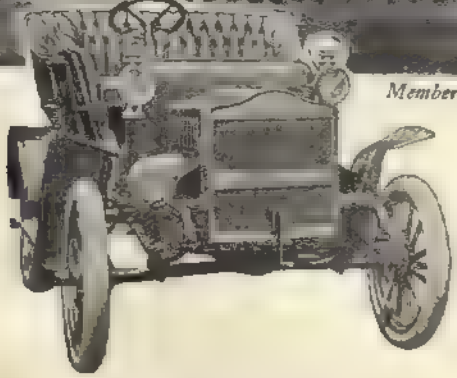

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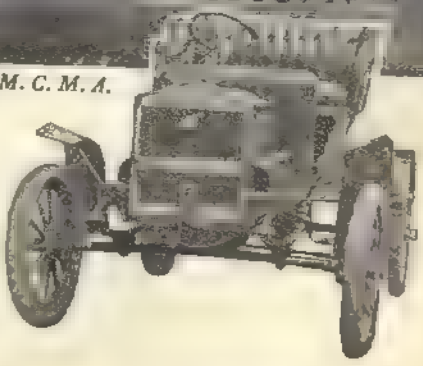
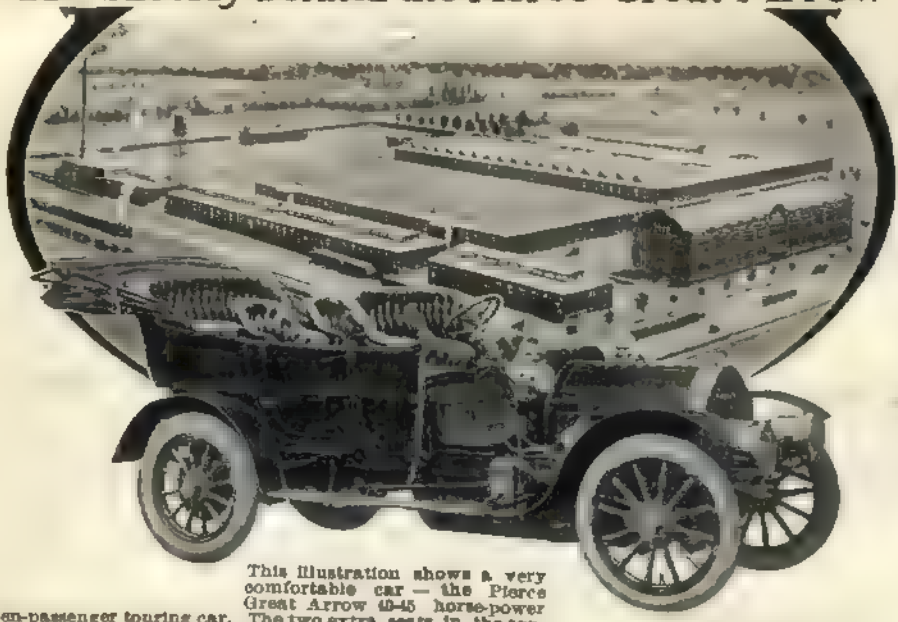


12-14 H. P. Tourabout. $825.

"The Factory behind the Pierce Great Arrow"



This illustration shows a very comfortable car — the Pierce Great Arrow 40-45 horse-power seven-passenger touring car. The two extra seats in the tonneau are just as comfortable as the other seats. They revolve like an office chair or a parlor car seat so as to add to the sociability of the party in the tonneau. Price $6,000. Cape top extra.

THE completion of the new factory in which Great Arrow cars will now be made marks an epoch in motor car building. This is the most complete factory devoted to the construction of automobiles in the world, and in some respects the most complete factory of any kind in the world. It has been planned to enable good workmen to do their best work. It will enable us to build a great many Great Arrows as carefully as in the old factory in the past we have built a few. It is a factory that multiplies the efficiency of the best selected corps of workmen in the automobile world. We have spent the years that have passed in producing an American car for American conditions so carefully made that it would cover the greatest amount of mileage with the least number of adjustments, and now we have built a factory capable of keeping up the standard of the cars.

The new Great Arrow Factory is but two miles off the main line from New York to Buffalo. Every owner of an automobile and everyone interested in automobile construction is invited to visit this model plant.

The George N. Pierce Company

Buffalo, N Y.

Members of Association of Licensed Automobile Manufacturers

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Ellis Motor Car Co . . . . 122 Halsey St., Newark, N. J
Wm. E. Bush . . . . 955 South Main St., Los Angeles, Cal.
Mobile Carriage Co . . . . Golden Gate Ave. & Gough St., San Francisco Ca.
Howard M. Covey . . . . Portland, Ore.
Broadway Auto Co., Inc., ... Broadway & Madison St., Seattle, Wash.
Tom Botterill . . . . 2643 California St., Denver, Colo.
The Geo. N. Pierce Co., ... 762 Golden Gate Ave. San Francisco, Cal.
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F. A. Nickerson Co . . . . 642 Congress St., Portland, Me
Pence Automobile Co, 717 Hennepin Ave., Minneapolis, Minn
J P Schneider . . . . 187 Jefferson Ave., Detroit, Mich.
Metropolitan Motor Car Co . . . . 1841 Euclid Ave., N E., Cleveland, O.
D. T. Williams Valve Co., ... 904 Broadway Cincinnati, O
Zorn-Strauss Co . . . . 518 Third Ave., Louisville, Ky.
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LUXURY

as expressed in a Pierce Great Arrow Enclosed Car

THE FIRST REQUISITE of an enclosed car is comfort; the second is elegance. The Pierce Great Arrow Suburban is the last word in the appointment of a car for city use. It is built upon the Great Arrow Chassis, which means perfection in running. The body is built in our own factory—that new factory which adds so much to our facility to produce good cars. Most of the body is aluminum, which is far better than wood, not only in looks and wear, but also in resistance to shocks. The inside of this car has every appointment that good taste, convenience and ingenuity can suggest. It offers the advantages of a well-equipped city carriage combined with a long-distance touring car, each perfect in itself, each doubly perfect in combination.

All Pierce dealers will be able to supply the latest models of enclosed cars after August first at the following prices:

The 30 H. P. Pierce Great Arrow Enclosed Car, $5,000.00

The 45 H. P. Pierce Great Arrow Enclosed Car, $6,250.00

PIERCE DEALERS

J. W. Maguire Co.	745 Boylston St., Boston, Mass.
Harrolds Motor Car Co.	B'way, 58th-59th St., New York, N. Y.
H. Paulman & Co.	1430 Michigan Ave., Chicago, Ill.
Banker Brothers Co.	Baum and Beatty Sts., Pittsburg, Pa.
Pope-Hughes Motor Car Co.	201 N. Broad St., Philadelphia, Pa.
Hills Motor Car Co.	222 Halsey St., Newark, N. J.
Bush & Shields	953 South Main St., Los Angeles, Cal.
Mobile Carriage Co.	762 Gough St., San Francisco, Cal.
Broadway Auto Co.	Madison St., Seattle, Wash.
Tom Botter II	1643 California St., Denver, Colo.
C. P. Joy Auto Co.	368 Minnesota St., St. Paul, Minn.
Pence Automobile Co.	717 Hennepin Ave., Minneapolis, Minn.
J. P. Schneider	187 Jefferson Ave., Detroit, Mich.
Metropolitan Motor Car Co.	1841 Euclid Ave., N. E., Cleveland, O.
Citizen Motor Car Co.	904 Broadway, Cincinnati, O.
The Zorn-Strauss Co.	518 Third Ave., Louisville, Ky.
Western Auto Co.	4701 Washington Blvd., St. Louis, Mo.
Palace Auto Co.	1408 Walnut St., Kansas City, Mo.
The Cook & Stoddard Co.	22d and P Sts., Washington, D. C.
Southern Auto Co.	Mt. Royal and Maryland Aves., Baltimore, Md.
Central Auto Station Co.	92 Renne Ave., Pittsfield, Mass.
E. R. Clark Auto Co.	117 Lyman St., Springfield, Mass.
Miner Garage Co.	High and Allyn Sts., Hartford, Conn.
Wilson & Co.	117 Cruid St., West, Montreal, Canada.
Wilson & Co.	142 Bank St., Ottawa, Canada.
Automobile & Supply Co., Ltd.	24 Temperance St., Toronto, Ont.
Hibbard Auto Co.	147 Wisconsin St., Milwaukee, Wis.
U. S. Auto Co.	21 Plymouth Ave., Rochester, N. Y.
Utica Motor Car Co.	Utica, N. Y.
Troy Auto Exchange	22 Fourth St., Troy, N. Y.
Standard Motor Car Co.	Scranton, Pa.
A. E. Lambert	Titusville, Pa.
N. S. Goodall, care American Express Co., 11 Rue Scribe	Paris, France.

The Geo. N. Pierce Company Members of Association of Licensed Automobile Manufacturers Buffalo, N. Y.

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as expressed in a

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Banker Brothers Co.	Baum and Beatty Sts., Pittsburg, Pa.
Foss-Hughes Motor Car Co.	20. N. Broad St. Philadelphia, Pa.
Elite Motor Car Co.	222 Halsey St., Newark, N. J.
Bush & Shields	951 South Main St. Los Angeles, Cal.
Mobile Carriage Co.	762 Gough St., San Francisco, Cal.
Broadway Auto Co.	Madison St., Seattle, Wash.
Tom Botterill	1643 California St., Denver, Colo.
Pence Automobile Co.	717 Hennepin Ave. Minneapolis, Minn.
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Chase Motor Car Co.	904 Broadway, Cincinnati, O.
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Western Auto Co.	4 [illegible] Washington Blvd. St. Louis, Mo.
Palace Auto Co.	14-8 Walnut St., Kansas City, Mo.
The Cook & Stoddard Co.	214 and 216 St., Washington, D. C.
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Tom Botterill	62 W. Third South, Salt Lake City, Utah.
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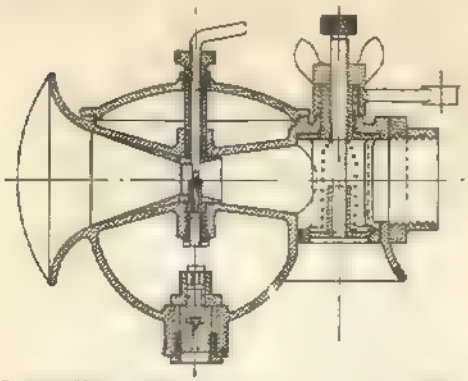
The Geo. N. Pierce Company Members of Association of Licensed Automobile Manufacturers Buffalo, N. Y.

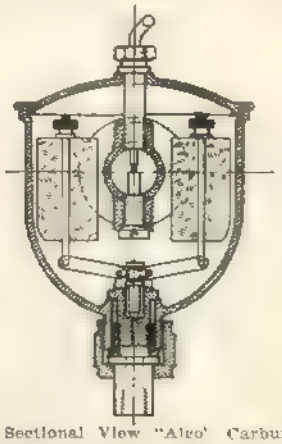
The "Alco" Carburetor

The "Alco" carburetor was recently placed on the market by the W. C. Torrey Company, 88 Broad street, Room 323, Boston, Mass., and one of its main features is the fact that the plane of the liquid is thru the outlet of the spraying nozzle, no matter what the angle of the liquid chamber body may be in relation to a horizontal line, so that with double independent floats the liquid is kept at a constant level, thereby allowing the boat or car to pitch or tip to any angle without loss of head.



Longitudinal Sectional View of the "Alco" Carburetor.

When starting the motor, the air inlet being a constant area over the liquid nozzle (all other openings closed), the liquid, owing to the peculiar form of the inlet by which a great vacuum is formed, is picked up instantly by the air and carried over into the motor, so that preliminary flooding is not necessary.



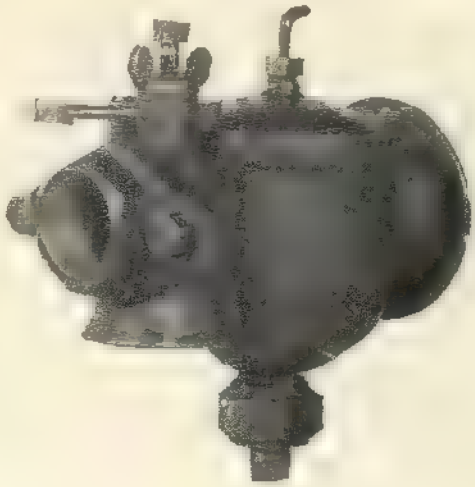
Cross Sectional View "Alco" Carburetor.

Another feature is that the main air inlet is adjustable to different conditions the motor may be working under, whether at slow or fast speed, or with heavy or light liquid fuel. This carburetor, it is claimed, vaporizes alcohol by breaking it into a fine spray, so the air will readily take it up.

Referring to the illustration, the first view shows a longitudinal vertical section thru the entire length of the carburetor, and the second view a cross section thru the float chamber.

The gasoline valve is at the bottom of the carburetor, and directly above it is the needle valve which is connected with double floats which control the amount of fuel admitted. The air is drawn thru the funnel-shaped opening shown at the left of the longitudinal section herewith. This opening has a removable inner tube, which opens into another conical passageway to the right of the nozzle, this form of air passage, of course, producing the maximum air velocity at the nozzle, picking up and vaporizing the liquid thoroly, and delivering it directly into the suction pipe of the motor. The opening of the gasoline nozzle is controlled by a valve stem situated at the top of the carburetor.

As the mixture of the liquid with the air increases, due to the speeding of the



Exterior View of the "Alco" Carburetor.

motor, the proper amount of air is admitted thru an air valve situated adjacent to the float chamber, and in a straight line with the mixing tube of the carburetor. This air valve is controlled by an adjustable spring, and is situated in a rotating throttle connected with a handle.

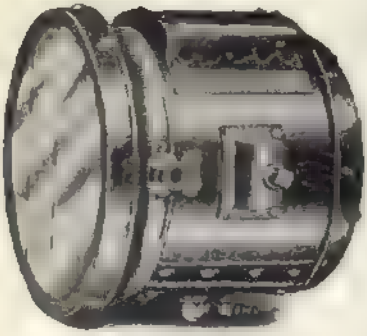
The height of the liquid in the float chamber is adjusted by thumb screws, so that the level can be changed at will. All the controling parts of the carburetor are on top.

The Puritan Gas Tanks, which are made by the Old Colony Light Company, of Boston, will hereafter be represented thruout New York State, New Jersey and Connecticut by the Pierson Motor Supply Company, of New York and Brooklyn. The Puritan tank is an acetylene gas tank used for supplying gas to lamps on automobiles and boats, and sells for $35.00.

STOP !!!

and read about

PHOEBUS LAMPS AND GENERATORS



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They are the best of their kind, and if there is anyone in the world who wants the best, it is the Autoist.

Especially when sold at a moderate price, as is the Phoebus.

We also manufacture an excellent line of **AUTO SUNDRIES**, which includes Exhaust Horns, Tire Holders and Extensions, Tire Pumps, Oil Guns, Horn Screens, Flexible Metallic Tubing, etc.

OUR 1907 CATALOG describes them all. Send for it.

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PIRELLI

ASK YOUR DEALER TO SHOW YOU THE

"Improved Construction" Italian Tire

Made by machinery—every tire is uniform in quality.

Try one alongside of other makes and watch the difference in results.

Same price as indifferent makes.

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Taking the edge from the enjoyment of riding by having a machine equipped with tires that you don't *know* are all right? Even though they should eventually prove good, that would be small compensation for worrying along with them when you can get

G & J Oval Raised Tread Tires

and dismiss the whole tire question.

They are made of the best materials, cured in live steam, and so shaped that when under load they normally present a large and lasting wearing surface.

Both G & J Clincher and Dunlop Tires are guaranteed on the Midgley Universal Rim—the rim that is Universal in fact as well as in name.

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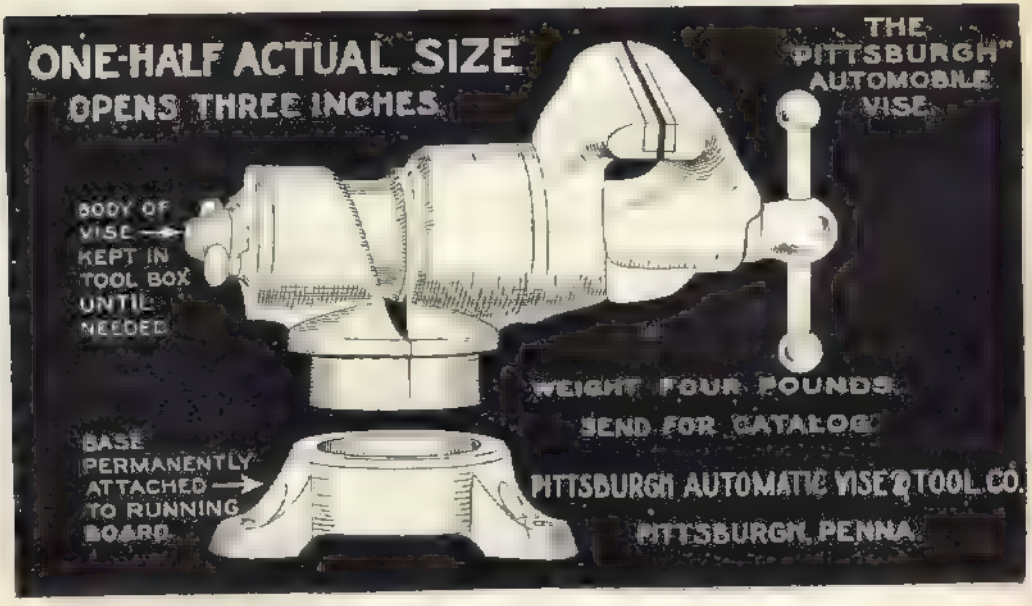

ONE-HALF ACTUAL SIZE
OPENS THREE INCHES
THE "PITTSBURGH" AUTOMOBILE VISE
BODY OF VISE KEPT IN TOOL BOX UNTIL NEEDED
WEIGHT FOUR POUNDS
SEND FOR CATALOG
BASE PERMANENTLY ATTACHED TO RUNNING BOARD
PITTSBURGH AUTOMATIC VISE & TOOL CO.
PITTSBURGH, PENNA.

The "Pontiac" high wheel car driven by an opposed 4 x 4 inch water cooled cylinders weighs 1000 lbs has a frictional differential at the ends of the jack shaft

The "Pontiac" High Wheel Car

Pontiac Spring & Wagon Works, of Pontiac, Mich., are now ready to fill orders for their high wheel runabout which has been in process of development for some time past. The makers call attention to the fact that automobile construction has been adhered to thruout, not carriage building practice. The car weighs 1000 pounds, and is driven by a 4⅜x4 inch, 2-cylinder opposed, water-cooled gasoline motor, developing 12 horse power. The cooling water is circulated thru a flat tube radiator with 20 per cent. excess radiating surface. A gear circulation pump is direct driven from the cam shaft

A peculiar feature of the car is the absence of roller or ball bearings in the wheels and axles, North's magazine self lubricating axle being used thruout. One charge of lubricant is sufficient for 800 to 1000 miles travel, and can be applied without removal of the wheels

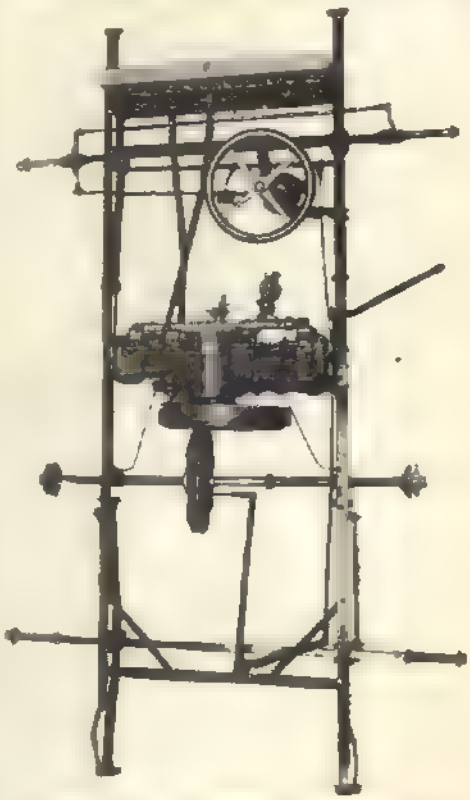
The car is side chain driven with friction transmission, and is also equipt with a friction differential on the ends of the jack shaft, the invention of the designer, H. J. Wells. This differential dispenses with the use of gears and commends itself, they claim, for simplicity, efficiency and durability.

The sprockets and brake drums are secured to the rear wheels with clips surrounding the spokes, thereby retaining the entire strength of the spoke. Brakes are of the latest internal expansion type, and are positive and effective.

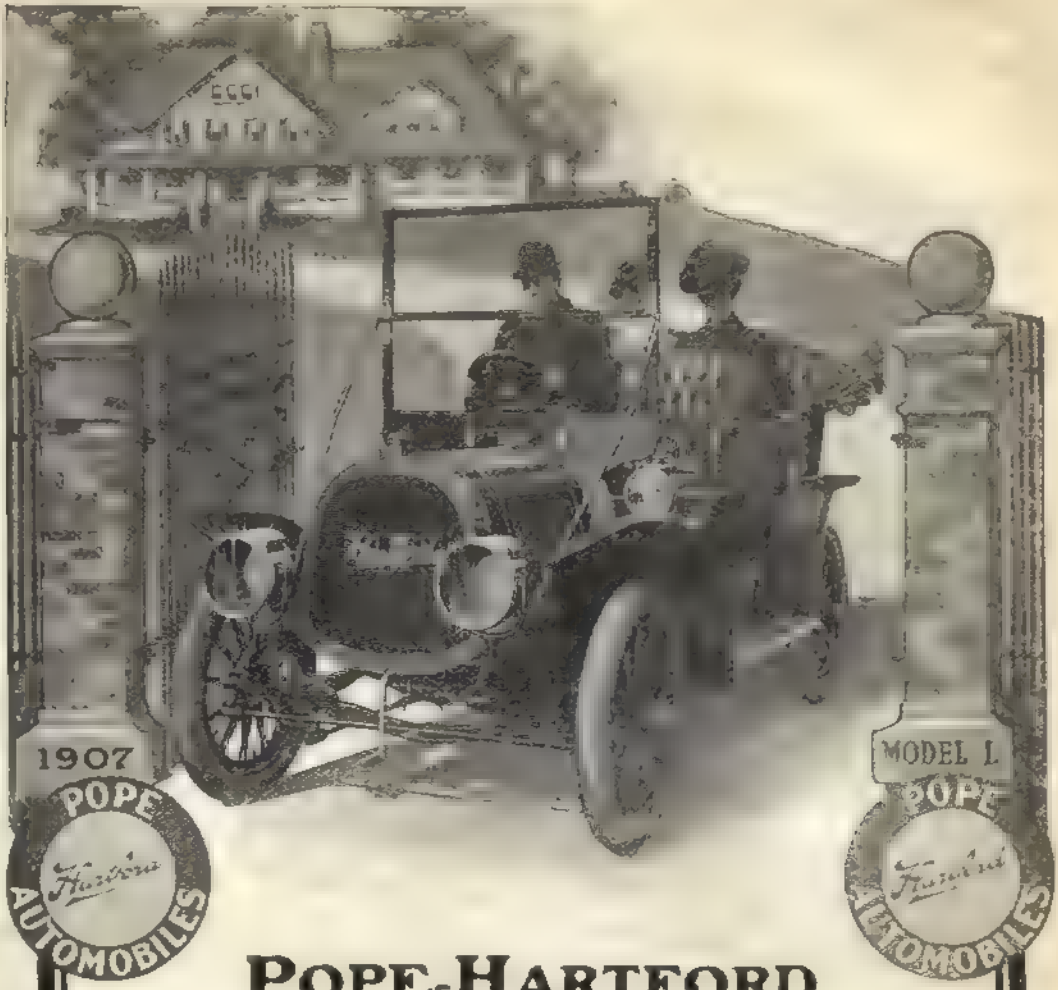
Realizing the necessity of minimum weight the makers have used the highest grade of material obtainable.

All castings are annealed steel and all forgings are hand forged in the company's shops. No malleable iron or drop forgings are used.

The chassis frame is 1⅛ inch by 1½ inch by 3 16 inch steel, reinforced by 1¼ inch by 2 inch ash sills, carrying a second turn of angle of the same size as the chassis frame concealed by the body panels, thereby securing great strength and flexibility yet retaining the appearance of lightness



Chassis of the "Pontiac" High Wheel Runabout. Price $[illegible] with top.



POPE-HARTFORD

PRICE FULLY EQUIPPED $2750.

EXTENSION TOP $150 EXTRA.

Find, if you can, a car with as clean a record. The personal experience of every Pope-Hartford owner in 1906 is your assurance and safeguard for 1907. Immunity from trouble, unfailing uniformity of performance—these two vital virtues have been rendered doubly certain in Model L by the remarkable record of Model F.

Last year's best has been immeasurably bettered. You have in the 1907 Pope-Hartford a 25-30 H. P. car as close to mechanical infallibility as unsurpassed Pope facilities and invaluable Pope experience can possibly make it.

Model L Runabout Equipment $2750.

Two bucket seats in front, third seat removable.

Pope Manufacturing Company

HARTFORD, CONN.

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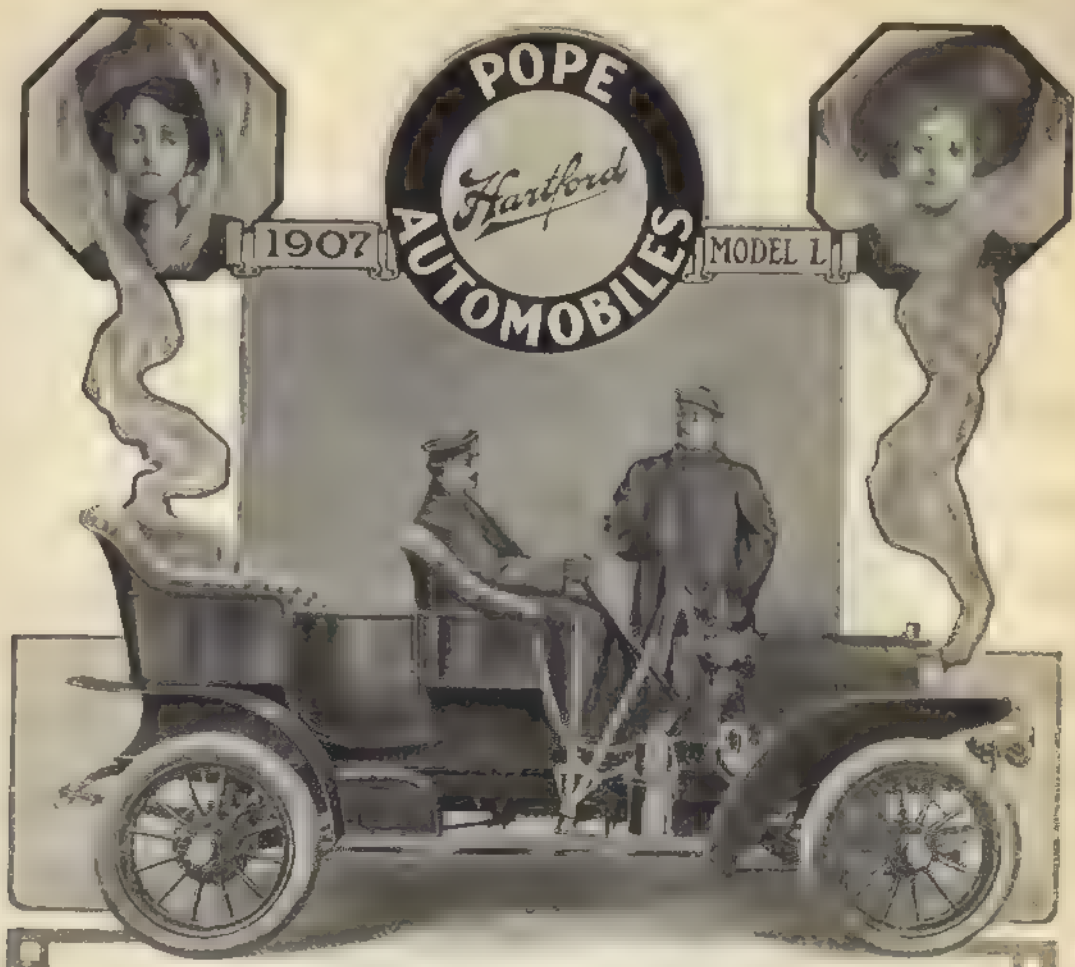

PRICE FULLY EQUIPPED $2750

(WITH TOP $150. EXTRA

Be Sure the Car You Buy has Provision for a Magneto

It is impossible to use one unless provision is made for it. **THIS IS OVERLOOKED ON A GREAT MANY 1907 CARS.** The Pope-Hartford Model L has this provision, giving a dual system consisting of an Eisemann High Tension Magneto combined with an Eisemann-Carpenter coil, permitting the use of the magneto or storage batteries by simply throwing the switch from one to the other.

The four-cylinder, vertical, water-cooled 25-30 H. P. MOTOR is equipped with mechanical valves and jump spark ignition with provision for magneto. Sliding GEAR transmission three speeds forward and reverse. Thorough LUBRICATION system. Especially efficient BRAKES operated by foot pedals and side lever. Perfection of CONTROL by levers on steering wheel but not revolving with it. All parts easily ACCESSIBLE. EVERY DETAIL of construction and equipment up-to-date.

POPE MANUFACTURING CO.,
HARTFORD, CONN.

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POPE-HARTFORD MODEL L.

No car in America has won so many victories in the events that demonstrate motor efficiency and dependability. The car for the fastidious, the vehicle for all the year use.

Touring Car or Runabout, $2750.

POPE Hartford AUTOMOBILES

Pope Manufacturing Co.

HARTFORD, CONN.

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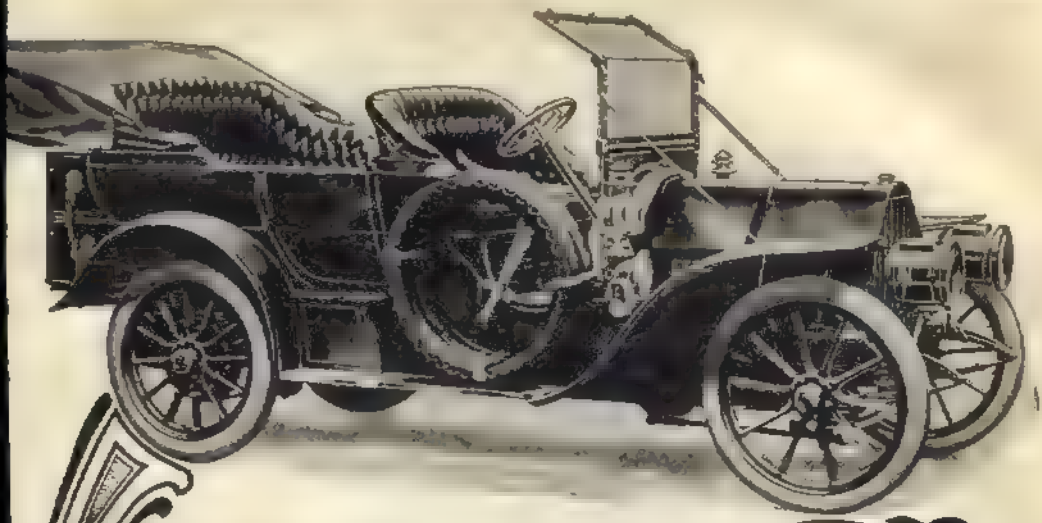

Type XV, 50 H. P. Pope-Toledo
Price, Fully Equipped $4,250

You can learn more about a really high-class motor car in an hour's ride in the 50 H. P.

POPE-TOLEDO

than we could tell you in ten pages of this publication.

A demonstration will prove to you that this car is more powerful, faster, easier handled, easier riding and sweeter running than any car on the market.

Comparison will show you that its construction embraces more alloyed steel, more ball bearings, more of the world's best and latest practice in design, workmanship and material than any other American car.

All we ask is investigation and comparison. The more you compare, the closer your investigation, the more you'll become convinced your choice should be a Type XV Pope-Toledo.

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Pope Motor Car Co.

A.L.A.M. **TOLEDO, O.**

POPE Toledo AUTOMOBILES

"The Factory behind the Pierce Great Arrow"

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Automobile & Supply Co., Ltd. ..... 29 Temperance St., Toronto, Ont.
Hibbard Automobile Co. 187 Wisconsin St., Milwaukee, Wis.
Foss-Hughes Motor Car Co. ..... 512 Industrial Trust Bld., Providence, R. I.
U. S. Automobile Co. ..... 921 Plymouth Ave., Rochester, N. Y.
Amos-Pierce Auto Co. ..... 109 S. State St., Syracuse, N. Y.
Utica Motor Car Co. ..... Utica, N. Y.
Troy Automobile Exchange ..... 29 Fourth St., Troy, N. Y.
Standard Motor Car Co. ..... Scranton, Pa.
A. E. Lambert ..... Titusville, Pa.
H. B. Doherty ..... 24 Wall St., Binghamton, N. Y.
Texas Automobile Co. ..... 614 Main St., Houston, Tex.
W. S. Goodsill, care of American Express Co. ..... 11 Rue Scribe, Paris, France.

Pope Toledo Type XV
Chrome Nickel Steel Ball Bearing Car

If every prospective purchaser of a high grade touring car could walk through the Toledo Factories and see with his own eyes the material, workmanship, and careful detail of finish we put in the

POPE-TOLEDO

he could not help but be impressed with the fact that no expense, time or care is spared to make it the very best possible to produce.

¶ A ride in the car would demonstrate that it is smooth, silent, easy running and fast; that it will reel off century after century without adjustment of any kind. No car contains as much alloyed steel; more ball bearings; more careful workmanship or care in design and construction.

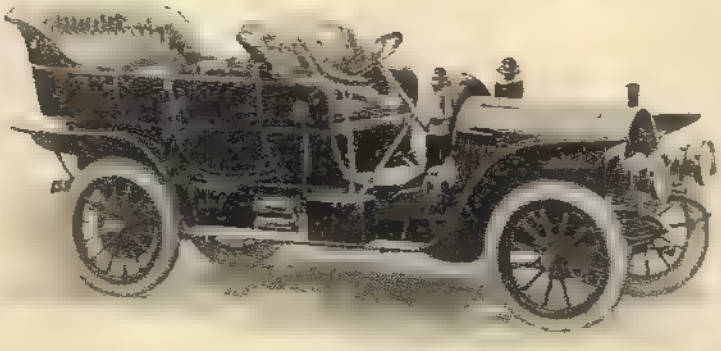
Price of Type XV, Illustrated above, $4,250
With Standard Equipment

Pope Motor Car Company
TOLEDO, OHIO

Members Association Licensed Automobile Manufacturers

POPE Toledo AUTOMOBILES

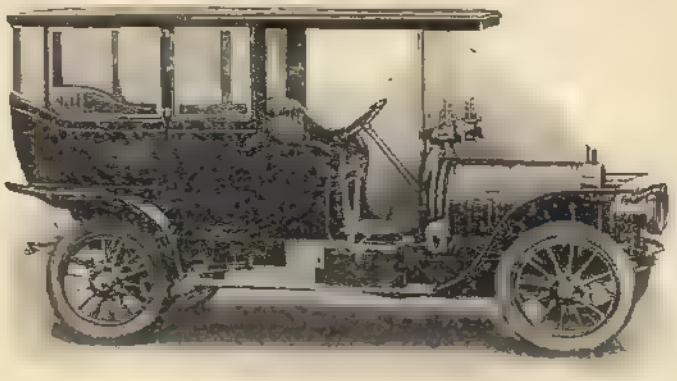
ROYAL TOURIST



1907 MODEL G—SERIES 2

Touring Car, $4,000 **Limousine, $5,000**

Both Seven Passenger and Forty-five Horse-power.



Royal Double Ignition System—Royal Carburetor—Royal Fenders—Royal Advanced Improvements.

Our second edition catalogues contain reproductions of photos of all cars and parts with blue prints of every Royal detail. Send for it and learn what is essential to a perfect car.

THE ROYAL MOTOR CAR CO.

CLEVELAND, O.

Member A. L. A. M.

We have some territory still open for reliable agents.

POPE-HARTFORD

PRICE FULLY EQUIPPED $2750.

EXTENSION TOP $150 EXTRA.

Find, if you can, a car with as clean a record. The personal experience of every Pope-Hartford owner in 1906 is your assurance and safeguard for 1907. Immunity from trouble, unfailing uniformity of performance these two vital virtues have been rendered doubly certain in Model L by the remarkable record of Model F.

Last year's best has been immeasurably bettered. You have in the 1907 Pope-Hartford a 25-30 H. P. car as close to mechanical infallibility as unsurpassed Pope facilities and invaluable Pope experience can possibly make it.

Model L Runabout Equipment $2750.

Two bucket seats in front, third seat removable.

Pope Manufacturing Company

HARTFORD, CONN.

Members Association Licensed Automobile Manufacturers

When the Light Burns Like This It's

Prest-O-Lite

Flame Always Steady Like This

YOU'LL SEE LIGHTS LIKE THAT ON 20,000 CARS

When you see a bright light coming—a steady light—a lamp that looks like a searchlight—you can be almost certain it's **Prest-O-Lite.** That's the shape of the flame above which you'll see in the lamps on over 20,000 cars.

YOU ought to have that shape lights on **YOUR CAR.** You'll be able to see better, have no trouble at all with your lights. **Prest-O-Lite** lights like City Gas. Just turn the key. That's all.

NO DELAYS RECHARGING—5 MAIN STATIONS—600 REPLACING STATIONS

Almost every responsible Dealer or Garage in the United States has a good supply of charged Prest-O-Lite Tanks. You don't have to wait a minute anywhere for Prest-O-Lite.

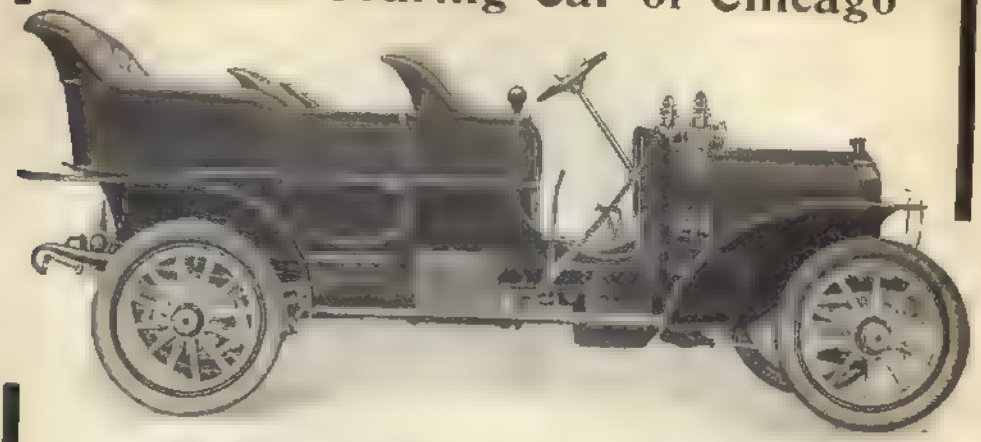
1907 Prest-O-Tire Tanks—on footboard. Inflate 3 tires with no pumping—Just turn a key valve—cost only $18. Recharged at average city cost of $2. Get one.

THE PREST-O-LITE COMPANY

MAIN STATIONS: New York, 1904 Broadway; Boston, 541 Tremont; San Francisco, Point Richmond; Toronto, 6 King St., W.; Indianapolis, 24 S. East St.

Or at Any Responsible Dealers or Garage.

Pullman Touring Car of Chicago



7 Passengers. 36 in. Wheels. 118 in. Wheel Base. 45-50 H. P.

A $5,000 Car for $3,600

MOTOR—4 Vert. Cyl., 5 in. bore, [illegible] in. stroke
DRIVE Shaft, [illegible]
TRANSMISSION Sliding gear, [illegible]
LUBRICATION [illegible]
FRAME [illegible]
AXLES [illegible]
BRAKES [illegible]
CONTROL [illegible]

RELIABLE AGENCIES DESIRED

PULLMAN MOTOR VEHICLE CO.
271-285 Dearborn St. Chicago, Ill., U. S. A.

CORBIN

THE 1907 Corbin is distinctly the best $2,500 value in the automobile world to-day.

It has been created without regard to cost, but rather to produce only the best in all details of material, workmanship and accessories.

Corbin Motor Vehicle Corporation

Member A. L. A. M.
NEW BRITAIN, CONN.

AGENCIES

[illegible]

High Prices on Spark Plugs are Out of Date

"SOOT-PROOF"

Plug prices have always been based on cost—the more we made, the less cost per plug, therefore a reduction in price each year for the past three years.

Now $1.00

Sold by every dealer everywhere. Be sure you get the genuine—look for the name

C. A. MEZGER, Inc.
40 West 60th Street, New York

NATIONAL SALES CORPORATION, Factory Sales Managers, 298 Broadway, New York

AMERICAN MORS

A CAR BUILT FOR PERMANENCE

Find every good point in every car you can—then come and critically examine and test the American Mors. Test it in every conceivable way.

Find its faults if you can. If it has faults we want to know it. We have tested every part of the American Mors in every way that the best mechanical engineers' brains could devise.

We know it to be the perfect all around car.

The best American brains and the best French brains unite in the American Mors.

Licensed by the Societe Anonyme d'Electricite et d'Automobiles, "MORS," Paris, France

GUARANTEED FOR ONE YEAR

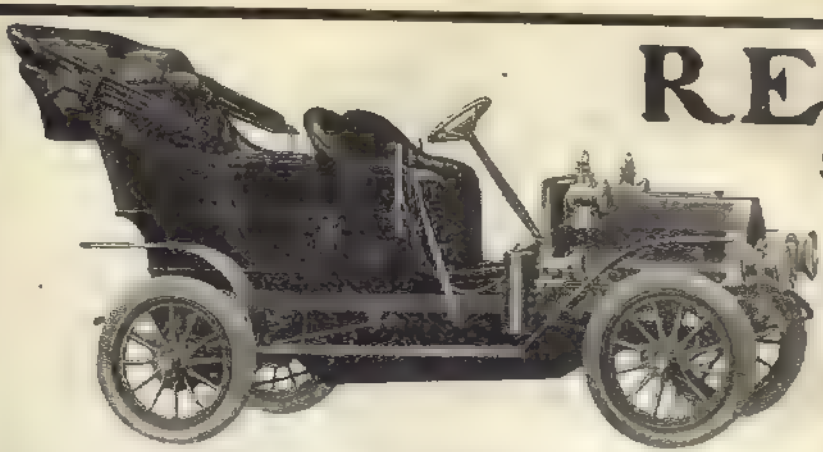
14-16 H. P.	24-32 H. P.	40-52 H. P.
$3,000	$5,000	$6,000

All Bodies of the Most Perfect Designs—Complete Equipment
Send for our Catalog. Address Dept. D.

THE ST. LOUIS CAR COMPANY Automobile Department St Louis, Mo.

New York: 1706-1718 Broadway, cor. 54th Street

BUILT BY THE
LARGEST BUILDERS OF STREET CARS IN THE WORLD



REO

$1250

The Road-Grader: Mile-Shortener: Sand-Packer:

You needn't level your roads nor flatten your speed-meter in REO cars. They're not built for skating rink use; but for regular every-day going.

Full of beauty and style. A picture to look at. A comfort to ride in. And with the strong, sensible, powerful, smooth working mechanism that runs away from the high-rated fancy priced cars; and makes beauty and style worth having.

"The Story of the REO" contains automobile pointers for you. Write for it.

2-passenger Runabout $650. 4-passenger Runabout $675.
f. o. b. Lansing

R. M. Owen & Co., Lansing, Mich.

General Sales Agents

The Most Up-to-Date Car in America

MODEL C—30-35 H. P.—$3500

because it has been designed entirely by Mr. L. P. Mooers, the foremost automobile engineer in the country. Just keep this fact in mind when deciding what car to buy, because it is a guarantee of satisfaction.

WRITE FOR DETAILED DESCRIPTION

MOON MOTOR CAR CO., St. Louis, Mo.

Real Motoring

One of the most remarkable automobile trips ever made in Colorado, the land of mountains and tremendous road difficulties, was that of Mr. Palmer L. Richardson from Loveland to Estes Park (35 miles and return) on Feb. 1, 1907.

He took four passengers and baggage aggregating 700 pounds. Estes Park is 3500 feet higher than Loveland. For long stretches the grades averaged 25 per cent. And all the way he drove straight into the teeth of a fierce gale. Yet he made the round trip in 4 hours 39 minutes and used only 7½ gallons of gasoline.

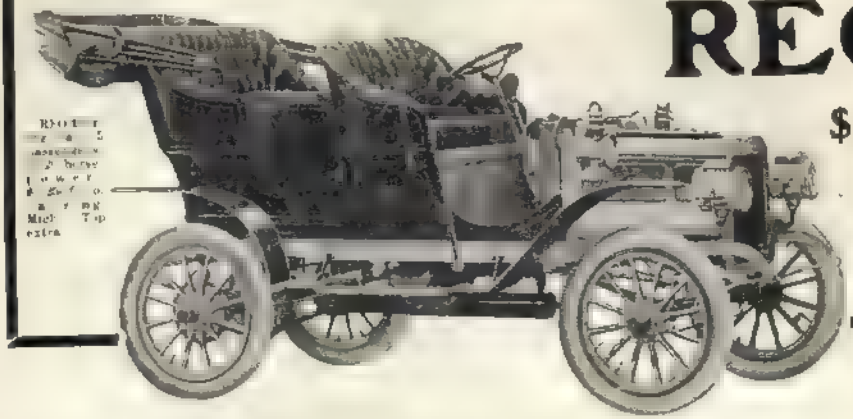
REO motoring is real motoring:—Real in the difficulties overcome; real in the smooth abundance of power that overcomes them real in the thorough construction and high efficiency that insure safety, and economize your money Write for the book that explains why this is so.

Two-seat runabout $650. Four-Seat runabout $675

Prices f. o. b. Lansing, Mich

R. M. Owen & Company, Lansing, Mich. General Sales Agent

REO



$1250

REO [illegible] passenger [illegible] Mich. Top extra

Racytype

Mora Roadster model pictured here is really right [illegible] throughout [illegible] passenger [illegible] Two additional [illegible] passenger [illegible] the rear [illegible] Mora Racytype equally at table [illegible]

[illegible] and cross country touring [illegible] smooth [illegible] high gear as low as four miles an hour and as fast as [illegible] Weight 1750 pounds [illegible] horse power 24 Price $2500

MORA MOTOR CAR COMPANY

319 Livingston Bldg., ROCHESTER, NEW YORK

Works at Newark, New York

$1250

REO 1000 points

The only perfect one at the price

Out of 80 starters and 50 finishers in the last great Glidden Tour—except for the Premier, the REO $1250 Touring-car was the only car at less than double its price, with a perfect score.

All the others cost from $2500 up to $7500. And many at similar prices dropped out entirely from this gruelling contest.

The same car immediately started on a non-stop run to Jamestown, Va., a distance of over 350 miles, making the trip in 23 hours. The car is now on exhibition in The Transportation Building at the Exposition.

When you can buy such perfect performance for $1250
Why pay two or three times the money?

Write for the book which tells you how the REO does it.

R. M. OWEN & CO., Lansing, Mich.

General sales agents for the Reo Motor Car Co.

Model 34 Rambler $2250.

IN THIS CAR is embodied every modern feature that has withstood the severe test of practical service and each has been refined and developed to the highest degree of mechanical perfection.

Through the offset crank shaft, straight line drive, direct from transmission gear to rear axle without an intervening joint, and ball or roller bearings at every point in the transmitting system, every ounce of cylinder pressure is delivered to the road wheels with the lowest possible loss in efficiency.

Equal improvements have been made in accessibility, comfort and outward appearance, and we guarantee this car to be equal in practical value to any car in the market, regardless of price.

We invite your most thorough examination, positive that it will convince you of the superiority of our product.

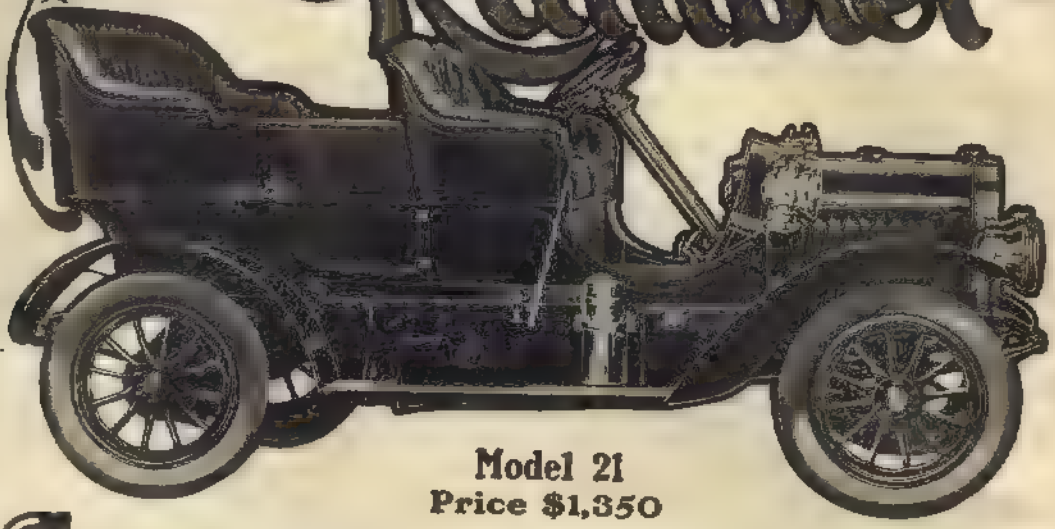
Our advance catalog, describing in detail this car both as touring car and roadster and the new utility car, Model 31, is at your disposal; write for it now.

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies Chicago, Milwaukee, Boston, Philadelphia, San Francisco. Representatives in all leading cities.

The Rambler



Model 21
Price $1,350

BUILT for the man who wants all of the enjoyments of automobiling, at the minimum of cost and worry, Rambler Model 21 affords the maximum of satisfaction every way.

Ample power and speed for country touring are combined with a degree of comfort and perfection of equipment that can be found only in the Rambler at the price, $1,350.

The Rambler unit power plant, as used in this model, is easily the feature of the year. Write for our handsome catalog, or ask our nearest representative to demonstrate the Rambler superiority to you.

Main Office and Factory, Kenosha, Wisconsin

Branches:

Chicago, Milwaukee, Boston, Philadelphia, San Francisco.
New York Agency, 38-40 West 62nd St. Representatives in all leading cities.

Thomas B. Jeffery & Company

"The Factory behind the Pierce Great Arrow"

This illustration shows a very comfortable car — the Pierce Great Arrow 40-45 horse-power seven-passenger touring car. The two extra seats in the tonneau are just as comfortable as the other seats. They revolve like an office chair or a parlor car seat so as to add to the sociability of the party in the tonneau. Price $5,000. Cape top extra.

THE real test of the Pierce car is not a perfect record in an exhibition contest like the Glidden Tour, but a perfect record over twice the amount of mileage in the hands of the owner.

Not for two or three weeks at a time, under ideal conditions, but all the time, under all conditions and over all roads, the Pierce Arrow has proved itself the American car for American men

Having produced a car as satisfactory as the Pierce, it is up to us to produce a factory good enough and big enough to make the Pierce car as good as it has been in quantities to supply the demand. Hence the Pierce car is now backed up by a factory which we believe is the most complete and most satisfactory of its kind in the world.

The George N. Pierce Company

Members of Association of Licensed Automobile Manufacturers

Buffalo, N. Y.

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J. W. Maguire Co. ..... 745 Boylston St., Boston, Mass
Harrold Motor Car Co. ..... Broadway 58th-59th Sts., New York, N. Y.
H. Paulman & Co. ..... 1430 Michigan Ave., Chicago, Ill.
Banker Brothers Co. Baum and Beatty Sts., Pittsburg, Pa.
Foss-Hughes Motor Car Co. ..... 101 N. Broad St., Philadelphia, Pa.
Elms Motor Car Co. ..... 222 Halsey St., Newark, N. J.
Wm. E. Bush ..... 953 South Main St., Los Angeles, Cal.
Mobile Carriage Co. ..... Golden Gate Ave. & Gough St., San Francisco, Cal.
Howard M. Covey. ..... Portland, Ore.
Broadway Auto Co., Inc. ..... Broadway & Madison St., Seattle, Wash.
Tom Botterill ..... 1643 California St., Denver, Colo.
The Geo. N. Pierce Co., Wholesale ..... 762 Golden Gate Ave., San Francisco, Cal.
C. P. Joy Auto Co. ..... 368 Minnesota St., St. Paul, Minn.
F. A. Nickerson Co. ..... 642 Congress St., Portland, Me.
Pence Automobile Co. 727 Hennepin Ave., Minneapolis Minn.
J. P. Schneider ..... 187 Jefferson Ave., Detroit, Mich.
Metropolitan Motor Car Co. ..... 1841 Euclid Ave., N.E., Cleveland, O.
D. T. Williams Valve Co. ..... 904 Broadway Cincinnati, O.
Zorn-Strauss Co. ..... 518 Third Ave., Louisville, Ky.
Western Automobile Co. 4702 Washington Blvd., St. Louis, Mo.
The Palace Auto Co. ..... 1408 Walnut St., Kansas City, Mo.
Cook & Stoddard Co. ..... 22d and P. Sts., Washington, D. C.
Southern Auto Co. ..... Mt. Royal and Maryland Aves., Baltimore, Md.
Central Auto Station Co. ..... 92 Renne Ave., Pittsfield, Mass.
E. R. Clark Auto Co. ..... 117 Lyman St. Springfield, Mass.
The Miner Garage Co. ..... High & Asylum Sts., Hartford, Conn.
Wilson & Co. ..... 117 Craig St., West, Montreal, Canada.
Automobile & Supply Co., Ltd. ..... 42 Temperance St., Toronto, Ont.
Hibbard Automobile Co. ..... 187 Wisconsin St., Milwaukee, Wis.
Foss-Hughes Motor Car Co. ..... 512 Industrial Trust Bld., Providence, R. I.
U. S. Automobile Co. ..... 21 Plymouth Ave., Rochester, N. Y.
Amos-Pierce Auto Co. ..... 109 S. State St., Syracuse, N. Y.
Utica Motor Car Co. ..... Utica, N. Y.
Troy Automobile Exchange ..... 92 Fourth St., Troy, N. Y.
Standard Motor Car Co. ..... Scranton, Pa.
A. E. Lambert ..... Titusville, Pa.
H. B. Doherty ..... 84 Wall St., Binghamton, N. Y.
Texas Automobile Co. ..... 614 Milam St., Houston, Texas

Details Make The Car

In The Model 24

Rambler

is every feature that makes mechanical excellence and general attractiveness.

Constructive Details

Motor—four-cylinder verticle, 4½ inch bore, 4½ inch stroke that gives full 25-30 horse power at the road wheels.

Transmission sliding gear of a special type in which all trouble in shifting gears is absolutely avoided.

Final drive propeller shaft and bevel gears with floating type rear axle fitted with ball and roller bearings throughout. Wheel base 108 inches, wheels 34 inch with 4 inch tires.

All accessories, such as mechanical sight feed lubricator, circulating pump, ignition tumer, etc., are of the latest and most approved types.

Equipment includes full cape top, five lamps, horn, tools, storage battery, etc.

Price, as below, $2,000.

Our catalogue, describing this and five other models $950 to $2500—is at your service.

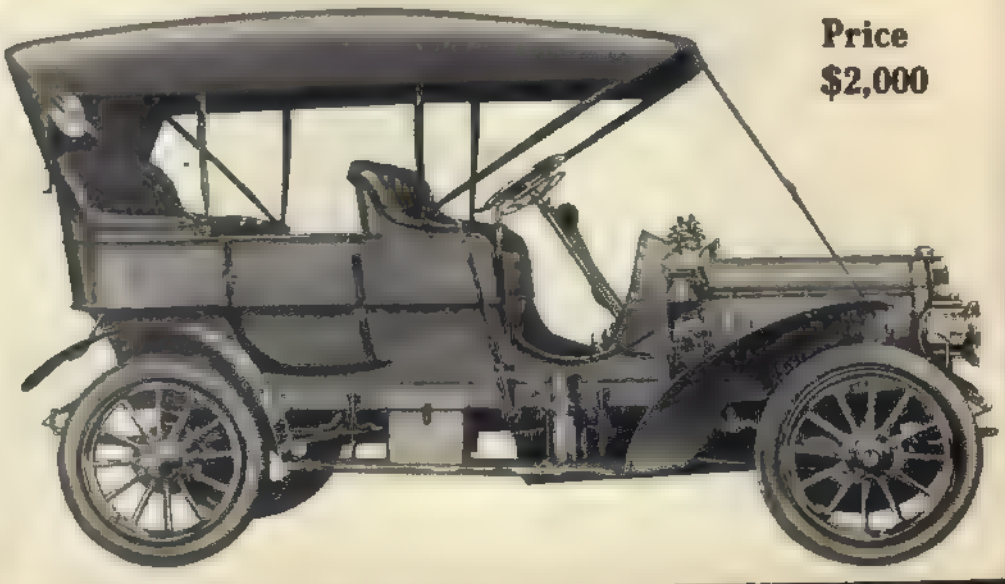
Main Office and Factory, Kenosha, Wisconsin

Branches:

Chicago, Milwaukee, Boston, Philadelphia, San Francisco

New York Agency, 38-40 West 62nd Street. Representatives in all leading cities.

Thomas B. Jeffery & Company



Price $2,000

There Are No Blanks

in the

Reading Standard

line of Bicycles.

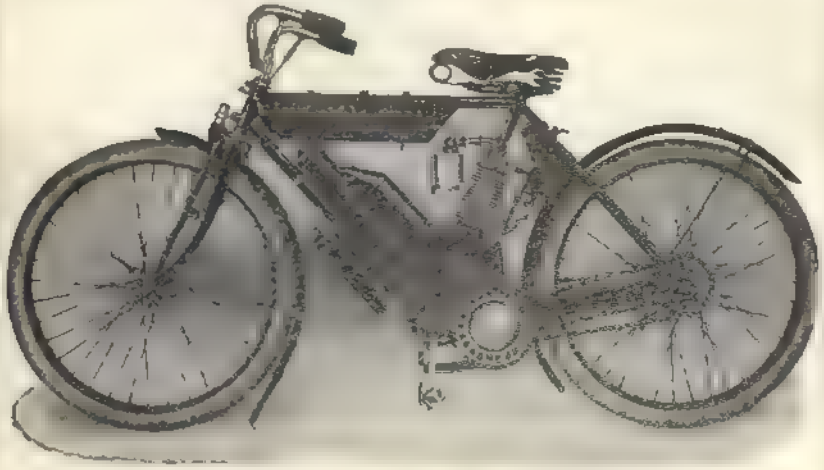
Every model is a winner. The every-day rider, the tourist, the road racer, the track racer, the Pace-follower, —all are catered to.

There's a model for each variety of man; and the ladies are not overlooked.

The Reading Standard is the Highest Standard.

The R-S MOTOR BICYCLE

America's Best!
Time-tried and Proven True.



The only motorcycle that has ever climbed Pike's Peak.
Send for catalogs. They are full of "meat."

Reading Standard Co., Reading, Pa.

There Are No Blanks

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Reading Standard

line of Bicycles.

Every model is a winner. The every-day rider, the tourist, the road racer, the track racer, the Pace-follower, —all are catered to.

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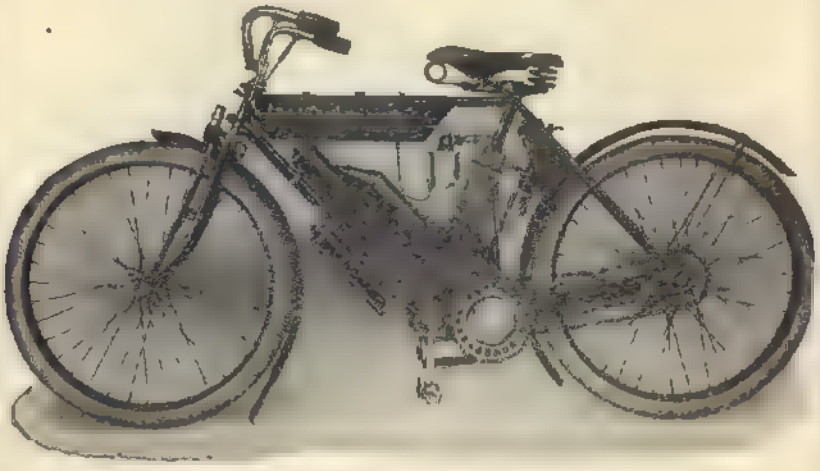


The only motorcycle that has ever climbed Pike's Peak.
Send for catalogs. They are full of "meat."

Reading Standard Co., Reading, Pa.

THE READING STANDARD

is the highest standard. It's like blood; it tells.

TWO INSTANCES

(1)---HERMAN H. HINTZE

riding a two-year old Reading Standard Bicycle easily won the

Century-Mileage Contest of 1907

of the Century Road Club of America.

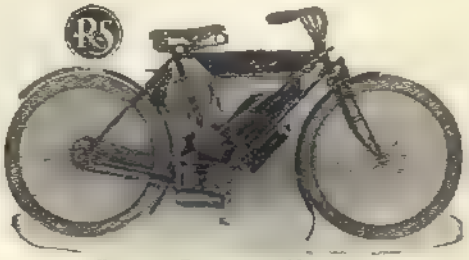
139 Centuries—20,292 Miles

(2)---R. S. MOTOR CYCLES

"America's Best"

Winner of the 20-Mile Road Race at F. A. M. Meet, Providence, R. I. Competing against one, two and four cylinder machines. The most important "open to all" event of the Meet. The "R-S" machine was a regular stock model, same as you get for your money.

First Up Pike's Peak



Built and Tested in the Mountains

First Up Mount Wilson

If machines of this sort appeal to you, we'll be pleased to forward catalogs and other particulars.

Reading Standard Co., Reading, Pa.

There Are No Blanks

in the

Reading Standard

line of Bicycles.

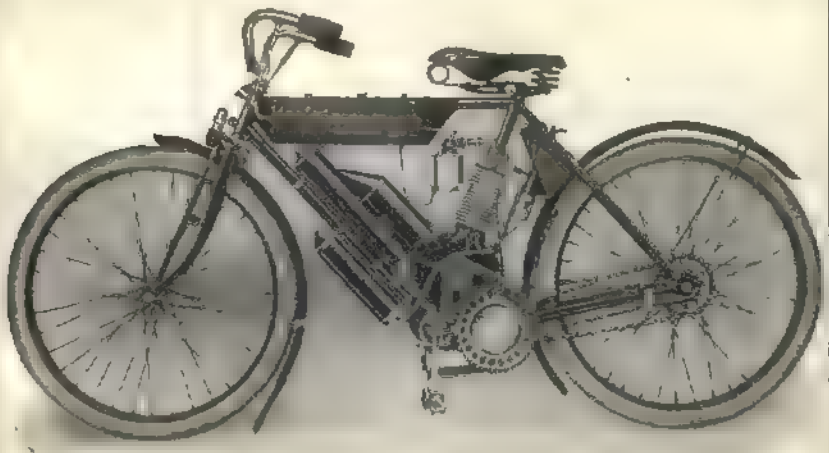
Every model is a winner. The every-day rider, the tourist, the road racer, the track racer, the Pace-follower, —all are catered to.

There's a model for each variety of man; and the ladies are not overlooked.

The Reading Standard is the Highest Standard.

The R-S MOTOR BICYCLE

America's Best!
Time-tried and Proven True.



The only motorcycle that has ever climbed Pike's Peak.
Send for catalogs. They are full of "meat."

Reading Standard Co., Reading, Pa.

BUILT and TESTED in the MOUNTAINS

America's Best

THE RS Motor Bicycles

ORIGINAL CONSTRUCTION

Up-to-date Improvements

3 Models. Price from $210.00 up

WISE DEALERS SELL THEM

THE WISE PEOPLE BUY THEM

THE ONE BEST LINE

READING STANDARD BICYCLES

5 Models. Price $25.00 to $60.00

The Reading Standard Truss Frame is

THE MOST SCIENTIFIC

Catalogues on Request

READING STANDARD COMPANY

READING, PA.

REO 4-Seat Runabout $675

This car doesn't have to make promises because it has made good.

Among hundreds of notable performances in a consistent 3 years' record it carried 4 people 682 miles for $3.38 per passenger—winning the gold medal from all $1500 cars in the New York Motor Club's great six day run. A performance never duplicated by any other car before or since.

Such a combination of runabout simplicity and handiness with almost touring car ability and enduring strength, was never found in any other car

The one that makes good

Write for the handsome 1907 catalogue which describes it in detail.
Also the REO 5-passenger touring-car $1250. Top extra

R. M. Owen & Co., Lansing, Michigan

General Sales Agents.

MODEL B

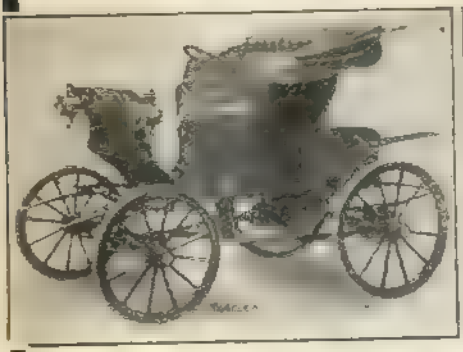
Water cooled, 98-inch wheel base, 32-inch wheels. Price $1800. Shipping weight, 2125 pounds.

MORA MOTOR CAR CO., 317 Livingston Building, ROCHESTER N. Y.

WORKS, NEWARK, NEW YORK

BUY AN ELECTRIC

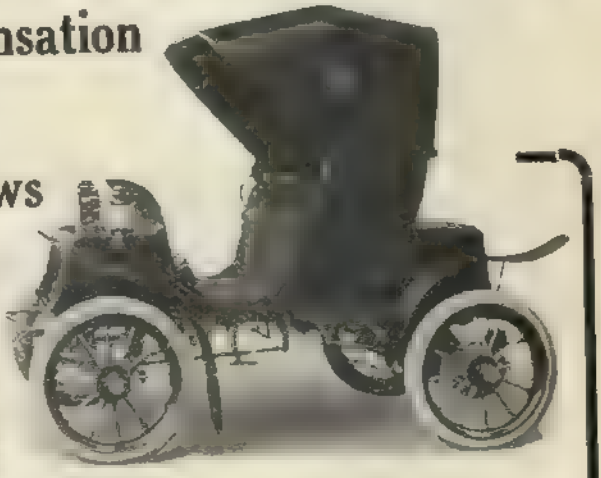
BUY A BABCOCK



Most of your driving is in the city. The Babcock Electric is the ideal car for city use. Is handled easily by ladies, physicians, business men. Our Electrics have a stap and style of their own Send for Catalogue

Babcock Electric Carriage Co., Buffalo, N. Y.

The Greatest Sensation of all the Automobile Shows



The 1901 models are even more complete. Class and refined as always—side by side with improved construction of engines, gears and many features that differentiate between Carriages made to serve certain things and those made to sell.

An analytical examination of Baker construction reveals intelligent study, science in the selection of materials used in every part and a comprehensive classifying according to use and wear—the greatest of all guarantees for service.

BAKER ELECTRICS

have attained an eminence in the craft that others have found impossible to reach. The Baker Carriages at all the shows have fairly monopolized attention and admiration.

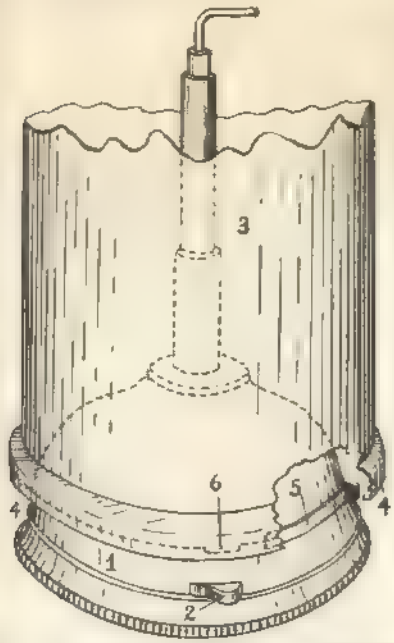
There were more Bakers sold at the shows than of any other make. There must be a reason for this. It is found in the easily demonstrated superiority of case, finish—and riding qualities. Better motor, better controller, better service of the battery.

Read the catalog as to mileage. We will not over-rate or over-state.

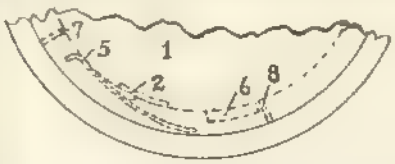
THE BAKER MOTOR VEHICLE CO. 1888-80th Street, N. W. CLEVELAND, OHIO

1908 "Stillman" Upright Oil Can Holder

The Stillman Upright Oil Can Holder, which was described in our May, 1906, issue, page 294, has recently been improved by the makers, Philadelphia Automobile Accessories Co., 153 North Broad street, Philadelphia, Pa., the new feature consisting of a catch provided at the bottom which will prevent the oil can falling out and also eliminates rattling.



Lower part of the 1908 "Stillman" Oil Can Holder.

The accompanying cuts give a clear idea of the device without necessitating an extensive description. The oil can (1) has soldered near its bottom periphery a lug or key (2). The oil can holder (3) has its bottom end flanged and formed into a grooved rim (4) upon the inner side of which is soldered a flat brass spring (5)

Detail view of the fastening device on the 1908 "Stillman" oil can holder

Normally this spring is in a position bending toward the center of the holder, but when the oil can is put in place, the lug (2) slides up on the back of the spring thus compressing it and holding the oil can rigid. The lug (2) of which there are two, one on each side of the can, is inserted at the small notch (6) cut in the lower edge of the rim (4), and on account of its resting on said edge prevents the can from dropping out. The relation of the lug to the spring, etc., can be readily seen from the small cut, which shows a sectional bottom view of the device. (7) and (8) indicate stops, which prevent the can from being turned in the wrong direction or too far.

New "Riley-Klotz" Automobile Horns

The Riley-Klotz Mfg. Co., 17 and 19 Mulberry street, Newark, N. J., includes in its line of automobile horns for 1908, a new oval pattern with triple twist which is styled No. 27.

The horn is designed for use on the largest and highest priced touring cars. It is highly polished, and finely finished in-

The "R-K." No. 27, Oval Horn.

side and out, and is equipt with the very best quality of bulb. The bell is 8 inches long by 6 inches wide thru centers. This concern is now furnishing all its large Dragon type horns with either oval or round bells, and is constantly adding new types to its line which at present consists of all the desirable styles used on touring cars, runabouts, motor cycles and bicycles.

Do not miss the December number of the Journal, which will contain a large number of descriptions of 1908 cars, and will also contain a forecast of the Chicago Show. If not a subscriber send $2 at once and we will enter your subscription for one year, commencing with any of the back numbers as far back as June if desired, so that you can obtain descriptions of the 1908 cars that have been described. The Cycle & Automobile Trade Journal, Forty-ninth and Market streets, Philadelphia, Pa.

The Breeze Carburetor Co. is enlarging its business at a very rapid rate, securing responsible parties as agents thruout this country and abroad, in most important population centres. Jackson & McKinley, of 16 Seaforth avenue, Toronto, Ont., Can., and Mr. Thomas H. McNevin, 70 La Salle street, Chicago, Ill., are among those already interested. Their Eastern Agents, The Breeze Carburetor Co., of N. Y., 101 W. Sixty-sixth street, New York, N. Y., carry nothing but Breeze Carburetors and Fuel Strainers, and have been very successful in the sale of them thru New York and New England.

1908 Season

New Models—New Prices

We now announce the completion of tools and equipment for producing the Improved 1908 Stewart Speedometer (with enclosed Odometer)—absolutely the most perfect Speedometer ever turned out of any factory, American or Foreign. Every feature and function of this truly splendid instrument has been brought to such a stage of perfection that all former efforts in Speedometer manufacture have been completely outclassed.

Our plan to make the best possible Speedometer, regardless of price, and sell it at a lower price than any other make, enables us to announce a change of price in Model No. 4, our 60-mile instrument, heretofore sold at $60. New price, $40.

$40

No. 4 Stewart Combination Speedometer Odometer, 4-inch dial, 60-mile $40

No. 5 Stewart Combination Speedometer Odometer, 4-inch dial, 90-mile $75

Covered by Our Ironclad Guarantee

A NEW SPEEDOMETER

The American

A low priced Speedometer of quality, exceedingly well made. A simple mechanism positively accurate within 50-mile limit permits us to sell THE AMERICAN at a price astoundingly low. This is a high-class instrument, suitable for all cars that do not require a Speedometer capable of indicating a greater speed than 50 miles.

Covered by Our Ironclad Guarantee

THE FASTEST SELLING SPEEDOMETER EVER OFFERED TO THE TRADE

SEND FOR CATALOG

$25

No. 7 The American Combination Speedometer-Odometer 4-in. E dial, 90-mile . . $25

Stewart & Clark Mfg. Co.

500 Dearborn Boulevard, Chicago, Ill., U. S. A.

For the Sake of Argument

Admit that there are several kinds of good automobile tires.

It's a sure thing that not ALL of them are good—that the poor largely outnumber them.

A poor tire isn't simply an "annoyance"—it's a nightmare! No man on earth would knowingly buy one, and yet a lot of them are sold right along.

To make sure that YOU don't get that kind, always specify

G & J OVAL RAISED Tread or MIDGLEY Tread Tires

Both tires can be had in the Clincher or Dunlop type. No need for special rims with these tires. They can be used and are guaranteed on the Midgley Universal Rim

If you could spend a day in our factory you would see for yourself a dozen reasons why G & J tires are absolutely dependable.

G & J TIRE CO. Indianapolis

Branches:

Boston 243 Columbus Ave. Cleveland—New No. 1237 Euclid Ave. Detroit—247 Jefferson Ave. Chicago—1434 Michigan Ave.
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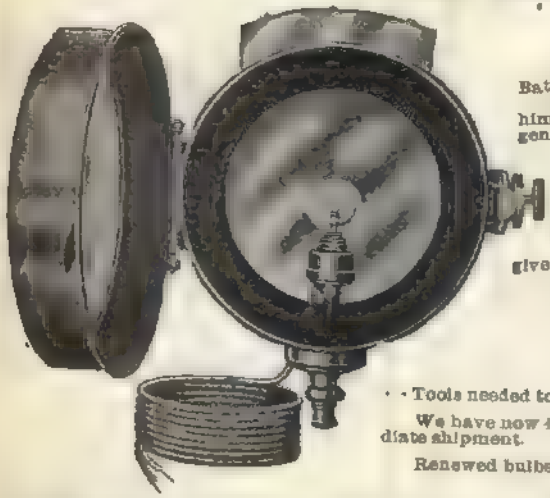
Distributing Agencies:

G & J Tire Agency Denver Colo. 1525 Court Place.
G & J Tire Agency Buffalo N. Y. 9 W. Huron St.
G & J Tire Agency Philadelphia, Pa. 1 N. Broad St.
Western Rubber & Supply Co., Los Angeles, Cal. 615 S. Main St.
Omaha Rubber Shoe Co., Omaha, Neb. 16th & Farnam Sts.
Northwest Auto Supply Co. Spokane, Wash. 1419-27 First Ave.
Pittsburgh Rubber Co., Pittsburgh, Pa.—913-915 Liberty Ave.

Enterprise Rubber Co. Boston, Mass. 110 Fremont St.
Alexander Tires Co. Charlotte, N. C. 25 N. Tryon St.
Reed & Carnrick, Richmond, Va. 34-36 South 1st St.
Plant Bros. Minneapolis, Minn.—21 S. Seventh St.
Central Rubber Co., Chicago, Ill. 1234 Lake St.
Syracuse Rubber Co. Syracuse, N. Y. 214 S. Clinton St.
Rochester Rubber Co. Rochester, N. Y. 55 Main St. East
Jennings & Albert Co., Memphis, Tenn. 178-183 Madison St.

THE Royal "Multiplex" Lamp and Attachment

(PATENTS PENDING)



Some FACTS

Nine times out of ten an owner has a Storage Battery, a Dynamo or a Magneto.

Now then, why should he carry around with him a cumbersome gas tank, or an explosive generator if he can light his lamps with our

"MULTIPLEX" Lamp

on his Battery, Dynamo or Magneto?

The "Multiplex" Lamp gives 30 to 35 Candle-Powers with reflector on 6 volts.

It will burn from 300 to 400 hours and will give a blinding, dazzling light

No storm can blow it out.
No leaky hoses to cause trouble.
No matches needed.
Light your lamp from the seat.

Tools needed to install: a screwdriver, that's all.

We have now 4, 6, 8, 10 and 12 volt lamps in stock for immediate shipment.

Renewed bulbs, any voltage up to 12,—$1.25.

COMPLETE OUTFIT—1 Bulb, Attachment, 10 foot Cable, Snap Switch and directions, $2.50 by mail, $2.60
Double outfits for 2 searchlights or two headlights, $5.00 by mail, $5.20.

THE ROYAL BATTERY CO., Makers 108-110 Duane St., New York City
National Sales Corporation: Factory Sales Agents, 296 Broadway, New York City

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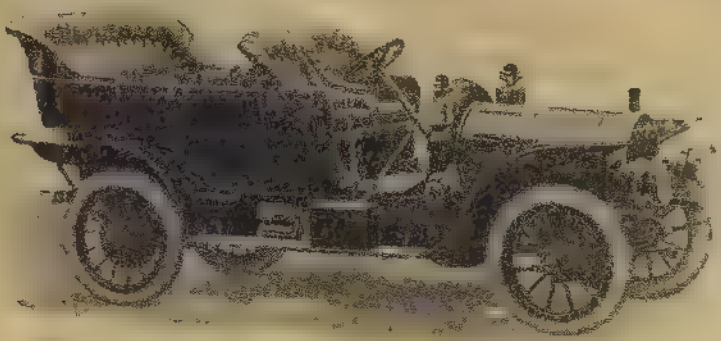

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Touring Car, $4,000 **Limousine, $5,000**

Both Seven Passenger and Forty-five Horse power.

Royal Double Ignition System—Royal Carburetor—Royal Fenders—Royal Advanced Improvements.

Our second edition catalogues contain reproductions of photos of all cars and parts with blue prints of every Royal detail. Send for it and learn what is essential to a perfect car.

THE ROYAL MOTOR CAR CO.

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We have some territory still open for reliable agents.

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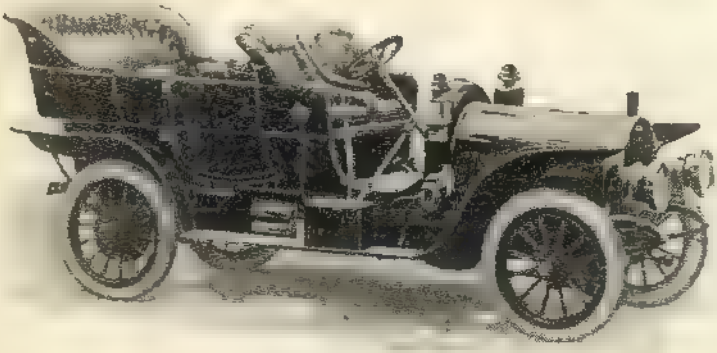

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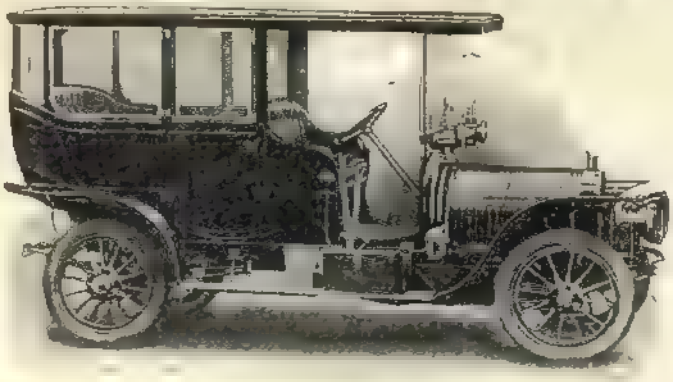

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Pope Toledo Type XV
Chrome Nickel Steel Ball Bearing Car

If every prospective purchaser of a high grade touring car could walk through the Toledo Factories and see with his own eyes the material, workmanship, and careful detail of finish we put in the

POPE-TOLEDO

he could not help but be impressed with the fact that no expense, time or care is spared to make it the very best possible to produce.

¶ A ride in the car would demonstrate that it is smooth, silent, easy running and fast; that it will reel off century after century without adjustment of any kind. No car contains as much alloyed steel; more ball bearings; more careful workmanship or care in design and construction.

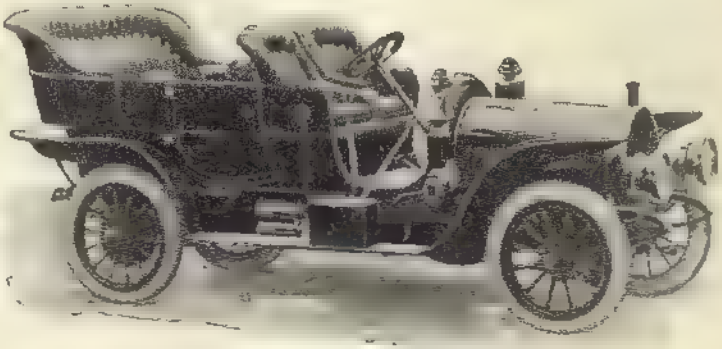
Price of Type XV, Illustrated above, $4,250
With Standard Equipment

Pope Motor Car Company
TOLEDO, OHIO

Members Association Licensed Automobile Manufacturers

POPE Toledo AUTOMOBILES

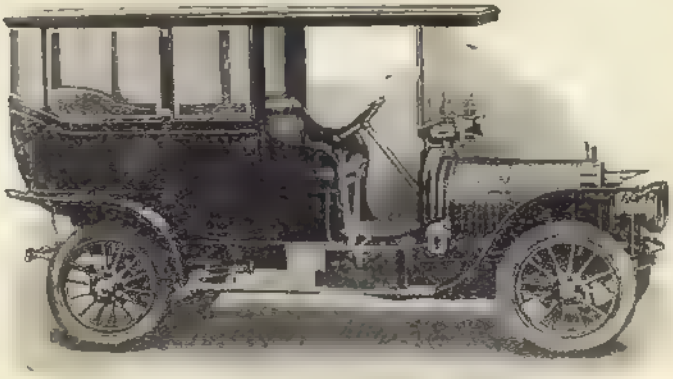
ROYAL TOURIST



1907 MODEL G—SERIES 2

Touring Car, $4,000 **Limousine, $5,000**

Both Seven Passenger and Forty-five Horse-power.



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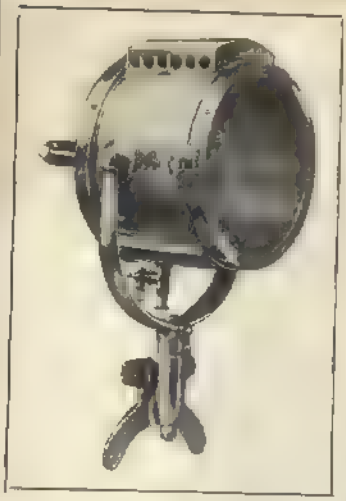


Searchlight Values.

When you are considering the relative values of the Rushmore Searchlight and its numerous imitations, here are a few things you cannot overlook.

1. The lens mirror of the Rushmore is the biggest that the cylinder will take. The cylinder diameter is not a bluff

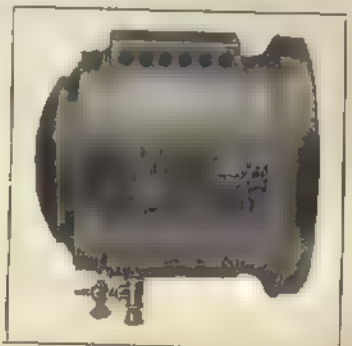
2. Every lens mirror in the Rushmore lamps is ground in the Rushmore factory, and is found in no other lamp.

3 Lens mirror efficiency varies inversely with the focal length, and the 1907 Rushmore lens mirrors have focal lengths *considerably shorter than Uncle Sam requires in his Navy searchlights.* No other lens mirror commercially made comes near them

4. The Rushmore lens mirrors are made, not of window glass, but of tough white annealed lead glass, which stands the heat.

5. The Rushmore Searchlight is put together with rivets and screws, and employs sheet metal heavy enough to hold them. It *is not* made of thin stock soldered together, with a few rivets or screws stuck in to distract attention from the solder. Any part can be removed and replaced without the help of a tinsmith.

Which do you honestly think is the better worth its price —the RUSHMORE or the cheap imitation?

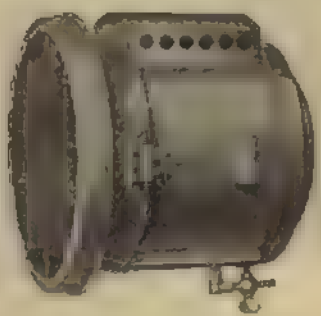


Rushmore Dynamo Works,

Plainfield, N. J.

London, Paris, Chicago.

WHAT SELLS THE Rushmore Searchlight



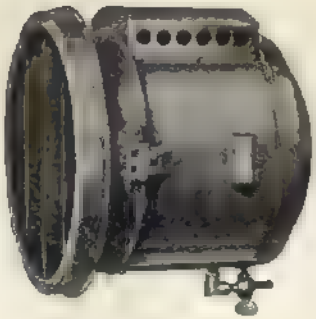
is not its size (light for light, no other lamp is so small). Nor is it price (size for size, the Rushmore is the highest priced American lamp). Nor is it dressy appearance (the Rushmore looks its part, but it certainly does not look like a brass sunflower).

What sells the Rushmore is just one thing:—the simple, unshakable, foundation fact that it is optically more efficient, and mechanically better built, than any other automobile lamp the world over. The Rushmore Lens Mirror has a shorter focal distance than any other made, and is the biggest the lamp body will contain. It must project the most light. And Rushmore construction is so substantial that the owner will always be proud of his lamps.

Rushmores are everywhere today; ask any Rushmore owner what he thinks of them!

Rushmore Dynamo Works,

PLAINFIELD, N. J.



Rushmores Abroad

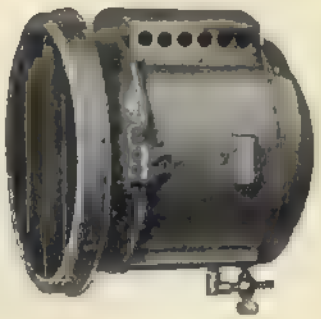
The phenomenal popularity of the Rushmore Searchlight at home is not more remarkable than its rapid rise in favor abroad. A year ago we thought our exports worth talking about (and they were), but they have increased four fold since then. In England Rushmores are the standard equipment on Mercedes and Fiat cars, and are furnished as an option on most of the high class cars. In France their sale has advanced by leaps and bounds, and cheap "imitation Rushmores" are becoming as common as nearer home. In Berlin and Milan new branches have lately opened with large orders already placed. In every European country and in the British Colonies leading personages among royalty and the nobility can be counted among Rushmore owners. Every motorist who tries a Rushmore admits its tremendous superiority over every European type of lamp, and to own one is even more a mark of sporting distinction than here. When a record run is to be made, Rushmores are more and more frequently selected, no matter what the stock equipment may be. The 45 h. p. Mercedes with which the London Monte Carlo record was lately cut to 29 hours 20 minutes carried Rushmore Headlights and Searchlight, and much of its success was credited to the high speed thereby made possible through a stormy night. The Gobron Brillié cars in the London-Paris **"Entente Cordiale"** motor service are similarly equipped.

And RUSHMORES are the only American gas lamps sold in Europe. Is not this fact suggestive?

Rushmore Dynamo Works

PLAINFIELD, N. J.

LONDON **PARIS** **CHICAGO**



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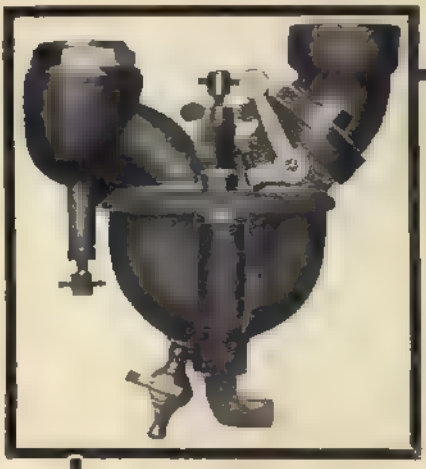

The Rutenber Carburetor

is the result of a careful study as to the requirements of the modern four and six cylinder high speed motors.

There are several carburetors on the market that will make your engine run, yet there are very few that will control your engine properly and make it run smoothly at all speeds.

The Rutenber will do this for you and a trial will prove the soundness of our assertions.

The above cut shows our Type A. 1907, and by turning the flange around, it can be used either as a vertical or horizontal outlet carburetor.

Send for Booklet and prices.

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—OF—

"R-S" MOTOR CYCLES

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Reading Standard Company,

READING, PA.

U. S. A.

Mt. Wilson Conquered

BY AN

R.-S. MOTOR BICYCLE

First Up Pike's Peak

First Up Mount Wilson

The R-S Slogan

"Built and Tested In the Mountains"

is full of meaning.

It means the power and ability to show the way up such long, steep, dizzy heights as Pike's Peak in Colorado, and Mt. Wilson in California. The R. S. went up the latter mountain in 61 minutes; the only automobile that succeeded required three hours. The ascents were not promoted or prompted by ourselves and were made by private owners using stock models the same kind you get for your money.

The difficulties of such climbs can be appreciated, as may also the sterling worth of the motorcycle that could perform such feats. Tests like these are the ones that count, and if you want a motorcycle which will fulfill all requirements of speed, dependability and economy, you will make no mistake in choosing the R. S.

Send for catalogs. They are full of "meat."

Reading Standard Co., Reading, Pa.

Makers of the Celebrated Reading Standard Bicycles.
"THE CHOICE OF THE CRACK RIDERS."

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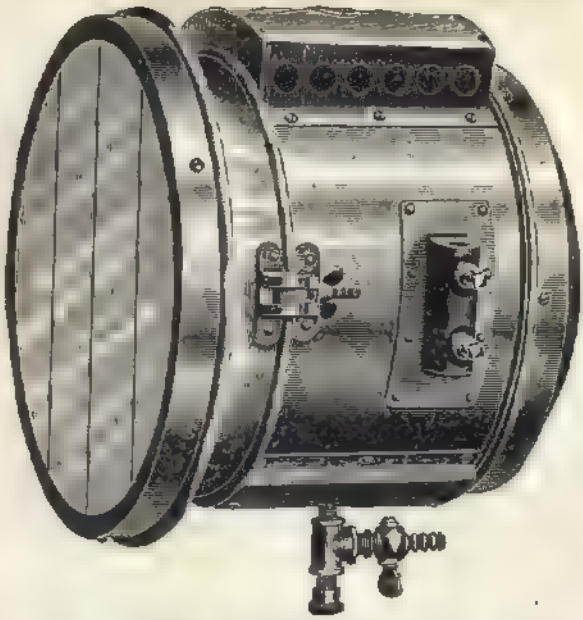

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EFFICIENCY and BEAUTY

SEARCH-LIGHT

All Brass

No. 6	6"	with stationary bracket,	$18 50
No. 7	7"	" "	20 00
No. 8	8"	" "	23.50
No. 9	9"	" "	27.25

SAXON LAMP COMPANY
526-532 W. 28th St., N. Y. City

We have a FULL AND COMPLETE LINE OF LAMPS OF ALL KINDS for Automobiles and Motor Boats . . . . Get our Catalog and Price List

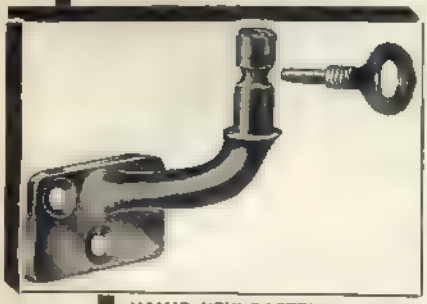
NO MORE FINES

THE BEST TAIL LAMP ON THE MARKET

For Driving without your Tail Lamp Lit

If you equip your car with one of Ham's and it will save you a great deal of trouble, annoyance and expense. The Vigilant illustrated is with us our most popular tail lamp. It is absolutely wind proof will not go out and can be relied upon to stay alight under any and all conditions. Besides the red light for rear signal it gives a powerful white light and the rigid handle makes it very handy and convenient for inspecting engine or car in case of a break down. It is fitted with our new Safety Locking Handle which does away with the constant annoyance of losing your lamp or having it stolen.

Write for our new catalogue, it will interest you



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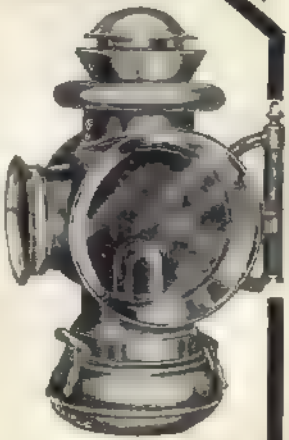

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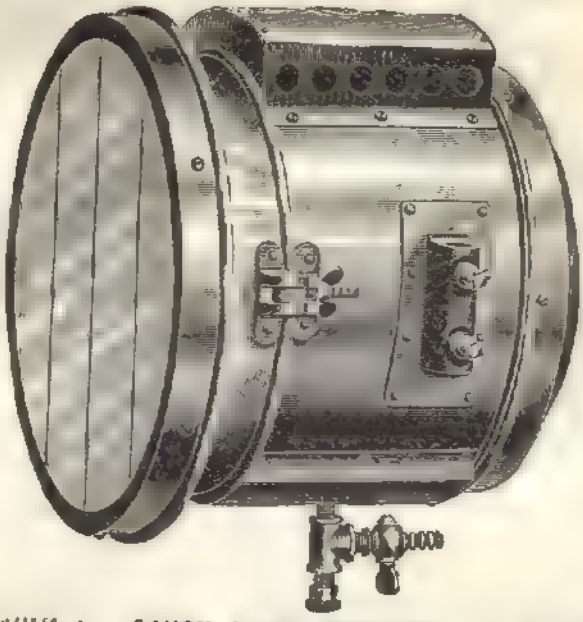

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All Brass

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No. 7 7" " " 21 00
No. 8 8" " " 23 50
No. 9 9" " " 27 75

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MANUFACTURING ROCHESTER HAM COMPANY NEW YORK U.S.A.

HAM'S "COLD BLAST" SQUARE LAMP

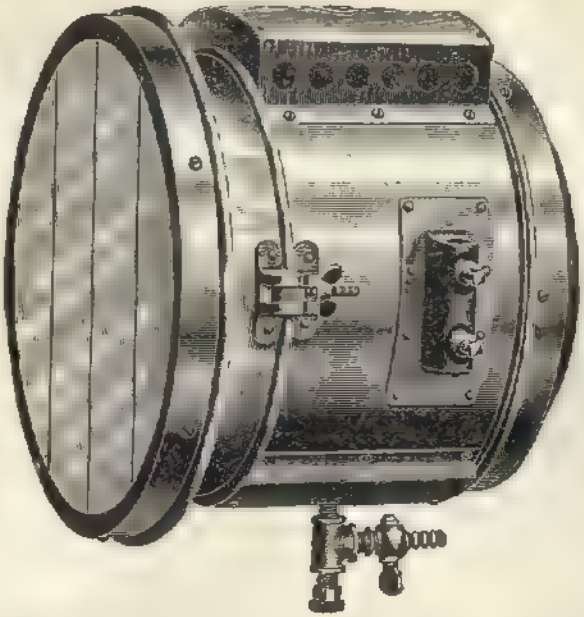
Our Square Lamp is very beautiful in design. The exterior is highly finished and the reflectors are silver plated highly polished, making a very bright interior. It is fitted with beveled glasses and makes a very pleasing appearance.

It is built on our celebrated "Cold Blast" principle which means perfect combustion; thus you always have a clear, bright, steady light that will not smoke, emits no odor, and is guaranteed not to blow or jar out.

C. T. HAM MFG. CO.
Rochester, N. Y.

THE "SAXON" LAMP

NONE BETTER BUILT



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A TRIAL WILL CONVINCE YOU.
Catalogue and prices of complete line upon application.

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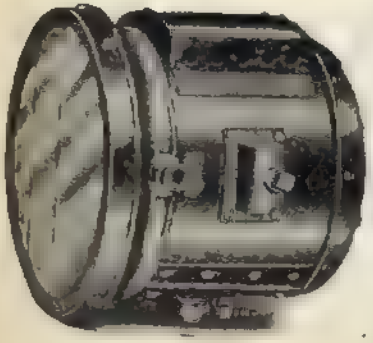
PHOEBUS LAMPS AND GENERATORS



They are good things, and you should know about them.

They are the best of their kind, and if there is anyone in the world who wants the best, it is the Autoist.

Especially when sold at a moderate price, as is the Phoebus.

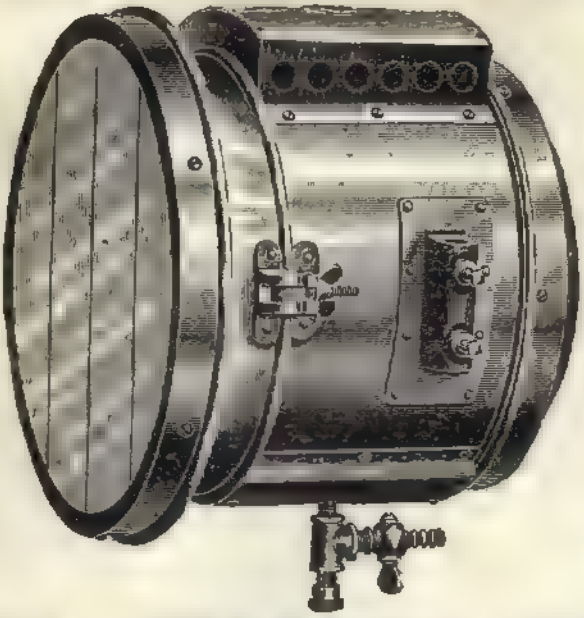
We also manufacture an excellent line of **AUTO SUNDRIES**, which includes Exhaust Horns, Tire Holders and Extensions, Tire Pumps, Oil Guns, Horn Screens, Flexible Metallic Tubing, etc.

OUR 1907 CATALOG describes them all. Send for it.

MANHATTAN SCREW & STAMPING WORKS, West End Ave. & 67th St. New York City

Phoebus
THE LAMP OF QUALITY

SAXON MOTOR LAMP



STANDARD for QUALITY

EFFICIENCY and BEAUTY

SEARCH-LIGHT

All Brass

No. 6, 6" with stationary bracket, $18 50
No. 7, 7" " " 21 00
No. 8, 8" " " 23 50
No. 9, 9" " " 27 25

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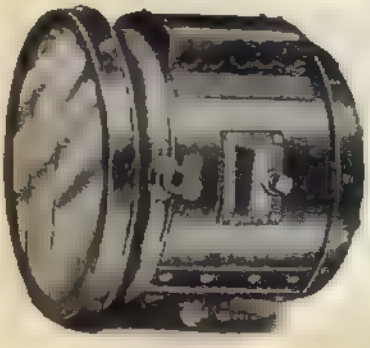

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THE Matheson is built to give, over American roads, the same perfection of service that the greatest and most costly foreign cars give over the floor-like roads of Europe.

Every point of excellence that money can buy in motor car construction is found in the Matheson. If we could, by adding thousands to its cost, produce a better car we would do so. We know and we have proven that no car in the world can equal the Matheson in performance over American roads, so we rest content.

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Touring Cars
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35 H. P., $4,500
50 H. P., $5,500

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Brooklyn, N. Y. The Matheson Co. of New York, Western Agency
Chicago, Ill. Matheson Motor Car Co., 1535 Michigan Ave.
Cleveland, O. Cleveland Automobile Supply, 2000 Euclid Ave.
Detroit, Mich. Detroit Garage
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Pittsburg, Pa. Matheson Garage, 41 Leader Bldg.
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Rochester, N. Y. Motor Transfer Co.
Rochester, N. Y. Rochester Automobile Co., 850-870 South Ave.
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With

Just Use Your Fingers

You don't have to carry a small-sized machine shop in your car if it is equipped with

GOODYEAR Universal Rims

All other Detachable Rims require Special Tools which, if lost, make it impossible to remove the tire.

The fact that Goodyear Universal Rims do not require any Special Tools to remove the tire is important for two reasons—and is further and Detachable Tires that are now applied to detachable rims are made with unextensible bases. This means that they cannot be pushed over the rim like the beaded tire which was made with an extensible base and proved to be impractical.

It is evident what a fix the users of all other than Goodyear Universal Rims get into when the Special Tool is lost or mislaid, because the Special Tool is necessary to remove the tire.

The Goodyear Universal is not only the oldest removable endless flange rim on the market but was "there to stay" eighteen months before any other rim with removable endless flanges was made. During our experimental days we discarded dozens of impractical devices which we tried out, found useless and not worth patenting. We are convinced that the "Universal Rim" cannot be constructed with bolts and nuts. Such devices quickly become bent and badly rusted. They cause more trouble than the detachable rim of other style. Detachable Rims which require the Special Tool are this sort.

The only Detachable Rim not of this sort, the only Rim which can and does give absolute satisfaction, is the Goodyear Universal Rim, because we have patented a very essential feature which makes it safe and dependable. To remove the tire from the Goodyear Universal Rim, just use the fingers—

They're Tools Enough

Simply take off the Valve Cap, remove the Rim Nut, push the Valve Stem up into the tire, pull off the Locking Rim, then the outer flange. Then slide off the tire—time 30 seconds. Simple, isn't it? Write for booklet, "How to Select an Auto-Tire."

The Goodyear Tire & Rubber Co.
Warwick St. Akron, Ohio

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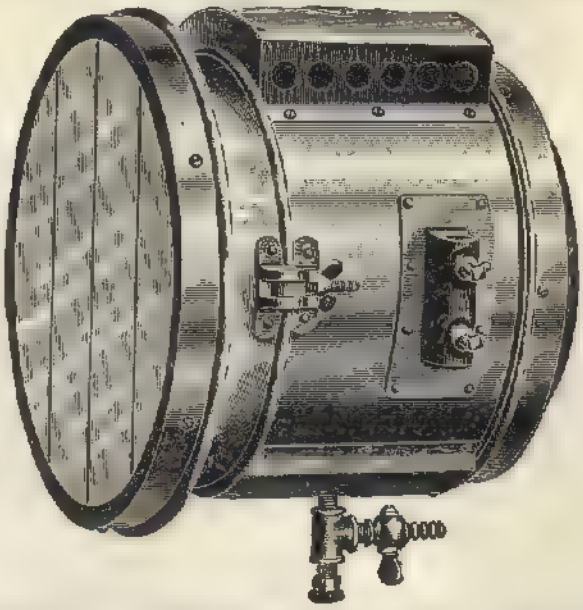
SAXON MOTOR LAMP



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No. 7	7" " "	21 00
No. 8	8" " "	23.50
No. 9	9" " "	27 25

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For Driving without your Tail Lamp Lit

If you equip your car with one of Ham's, and it will save you a great deal of trouble, annoyance and expense. The Vigilant, illustrated herewith, is our most popular tail lamp; it is absolutely wind, rain, and dust proof and can be relied upon to show a light under any and all conditions. Besides the red light for rear signal it gives a powerful white light and the ring handle makes it very handy and convenient for inspecting engine or car in case of a break down. It is fitted with our new Safety Locking Handle, which does away with the constant annoyance of losing your lamp or having it stolen.

Write for our new catalogue, it will interest you.

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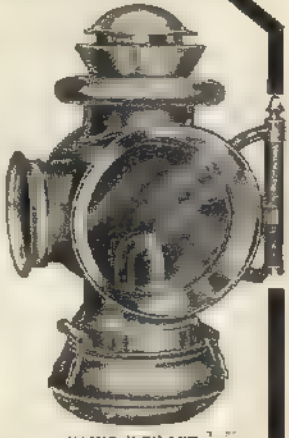

HAM'S VIGILANT TAIL AND INSPECTOR LAMP

C. T. Ham Manufacturing Co.

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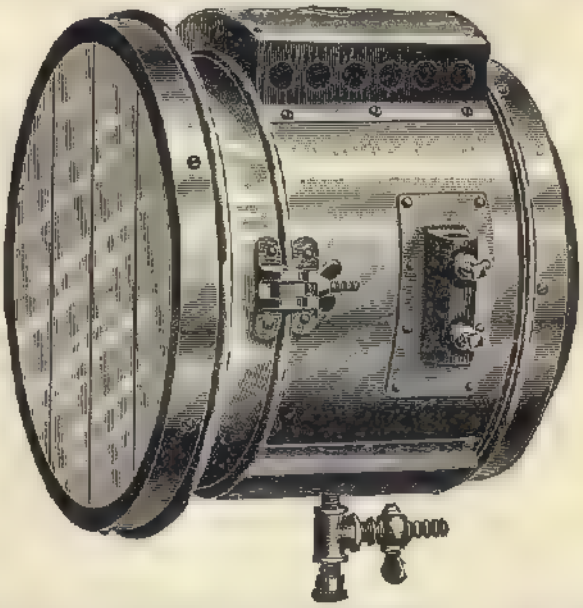

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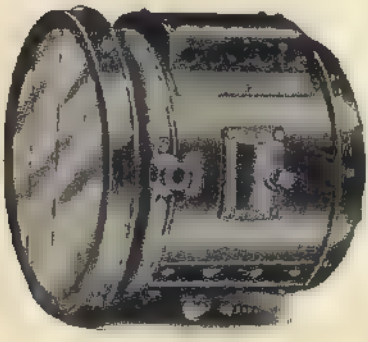

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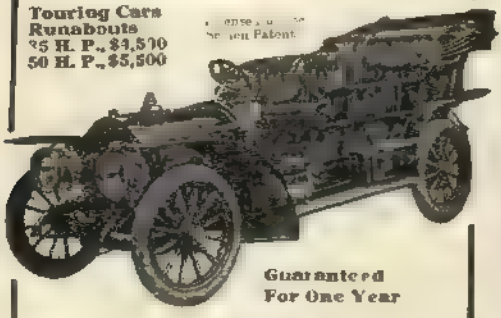

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Newark, N. J. ... The Matheson Co. of New Jersey, 15 Main Ave.
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Portland, Ore. ... Auto Co., 80-82 [illegible] St.
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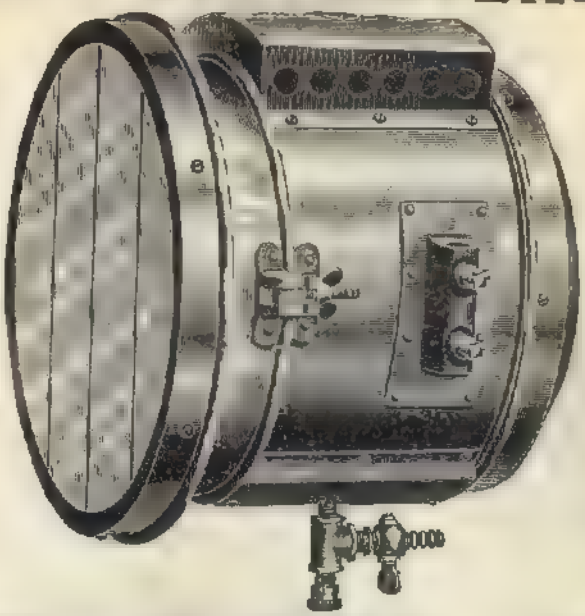
SAXON MOTOR LAMP

STANDARD for QUALITY

EFFICIENCY and BEAUTY



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For the Manufacture of

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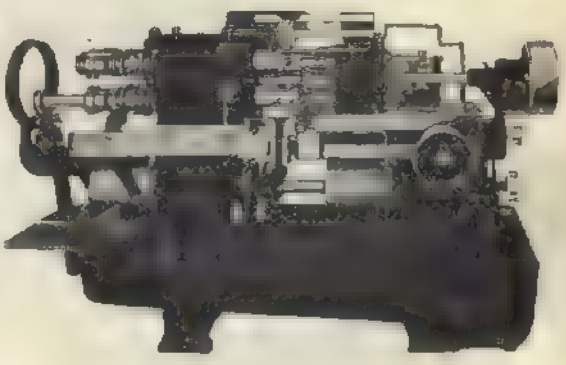

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CLEVELAND, O.
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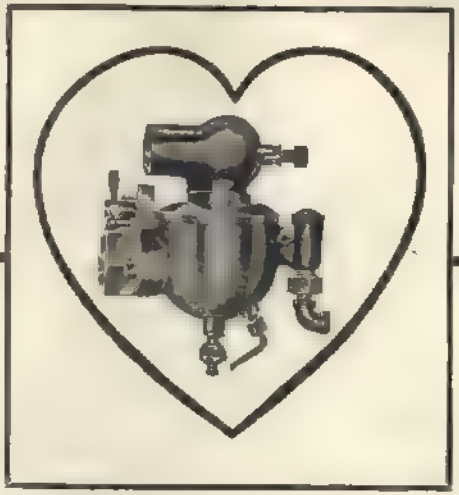
THE HEART OF THE AUTOMOBILE



The Schebler Carbureter

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¶ 1,094 8-16 miles in twenty-four hours continuous running on a circular track; 1,000 miles in 21:58:00 4-5 continuous running on a circular track, breaking all world's records by 1:35:19 1-5.

¶ This is the world's record travels of a National car fitted with a SCHEBLER carbureter at the Indianapolis Fair Ground Tracks, Nov. 16th and 17th. Hundreds of miles were reeled off with scarcely a variation of a second in the time of each.

¶ Is it any wonder that over one hundred of the largest marine and automobile engine builders in the United States and Canada are equipping their motors with the SCHEBLER?

¶ A carbureter that gives a perfect mixture at all engine speeds regardless of weather conditions is truly "The Heart of the Automobile."

WHEELER & SCHEBLER, Manufacturers Indianapolis, Ind., U. S. A.

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E. B. CUMMER, 1528 Court Place, Denver, Colo.
F. C. BOWLUS, 232 Baronne St., New Orleans, La.
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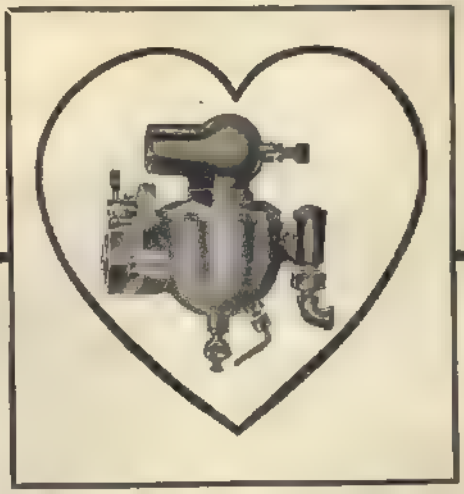
THE HEART OF THE AUTOMOBILE



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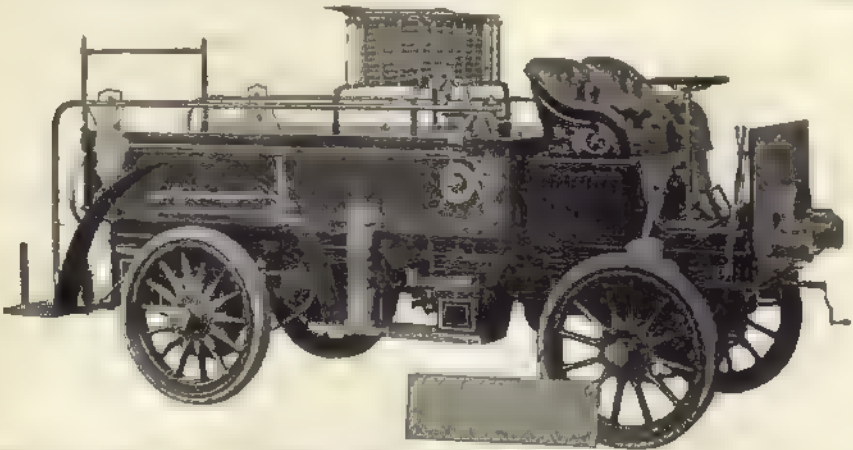
GEO. BELL & CO., 38 Fenchurch St., London, England.

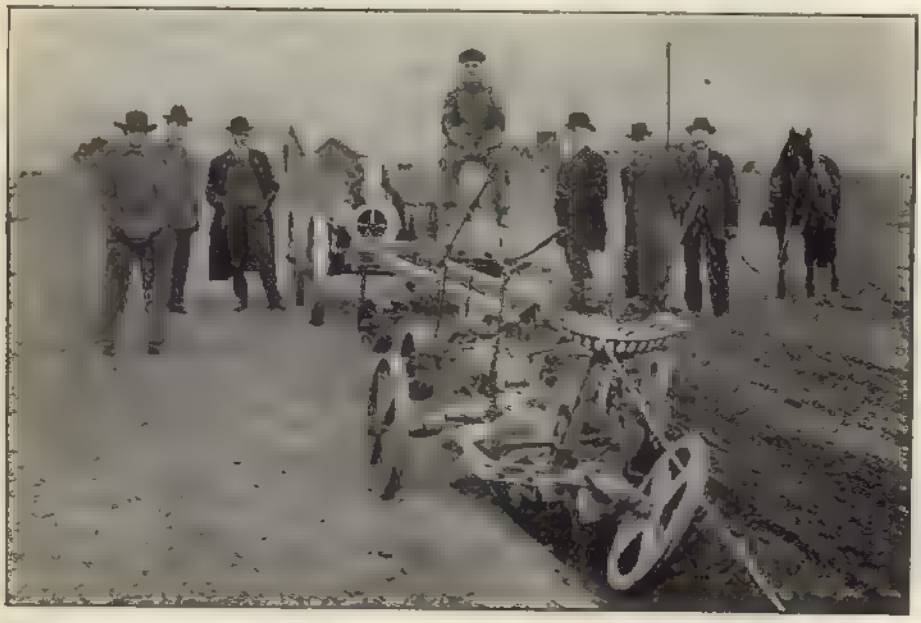
Seagrave Fire Apparatus

For several years there has been much interest centered in motor propelled apparatus for fire department, ambulance and patrol service. The Seagrave Fire Wagon Co., Columbus, Ohio, have appreciated from the first that this new system would be in demand, and in 1905 began investigating and experimenting, and arranged with the Oscar Lear Automobile Company, also of Columbus, to develop an engine suitable for this work, with the result that they have built the Frayer-Miller air-cooled engine in 4 and 6-cylinder types with capacity of 24 to 45 H. P., and arranged with the Seagrave Company for exclusive control of this engine for their product.

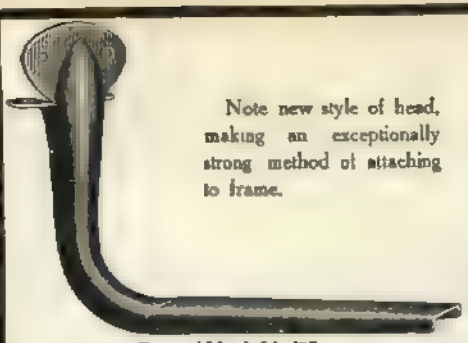
The motor is geared up to about 20 miles per hour maximum. The chemical engine has 40 gallons capacity with 150 ft. chemical hose, two 3-gallon Seagrave extinguishers, gas lamps, lanterns, gong, axe, crowbar, etc., etc. The axles are fitted with Timken roller bearings and the wheels with Swinehart clincher tires. The car is said to ride comfortably at 20 miles per hour. During a test made recently the car was run from Columbus to Chillicothe, a distance of 105 miles, in 8 hours, 17 minutes, making an average of nearly 13 miles per hour



Combination Hose Wagon and Chemical Engine, built by the Seagrave Co., on chassis made by Oscar Lear Automobile Co.



The above photo represents a new plowing machine equipt with a four-cylinder, air-cooled Frayer-Miller Automobile Motor. The device is now in use near Los Angeles, Cal. The manufacturers are known as the Farmobile Co., and are said to have selected the air-cooled motor, as it seems to them most suitable for the purpose. They are going extensively into the business of manufacturing these farm machines, and have ordered some motors of larger size, and will shortly have out their second machine



Note new style of head, making an exceptionally strong method of attaching to frame.

Patented March 5th, '07

SOMETHING NEW

STAMPED STEP HANGERS

Neat—Light—Strong

Made in several lengths and drops

The CROSBY COMPANY

BUFFALO, N. Y.

L. CHAS. KENEN

French Automobile Designer

We furnish designs, with complete working drawings, specifications for materials, best treatment of steel, etc., for motor cars, trucks, omnibuses, delivery wagons, auto boats and railway motors.

Our experience, gained by many years of work in the best French shops, assures rapid and successful results, without experiments whatever.

Correspondence Solicited.

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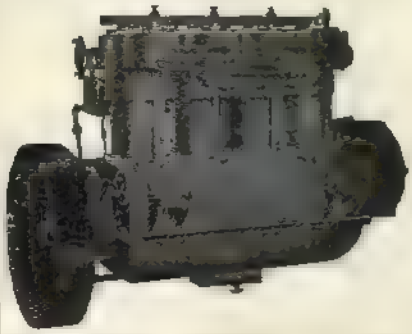


Automobile and Truck

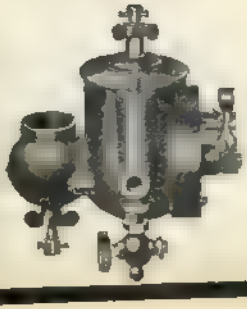
MOTORS

16-18 H. P.
24-30 H. P.
45-55 H. P.

HERSCHELL-SPILLMAN CO.

W. Tonawanda, N. Y.

A Word to the Autoist



FOR BEST RESULTS USE

Palmbla Carburetor

THE NORTH CHICAGO MACHINE CO.

NORTH CHICAGO, ILL.

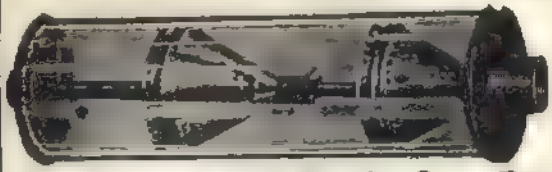
WRITE FOR PARTICULARS.

The Ejector Muffler

Foot Lever and Bracket

the muffler that muffles and increases the horsepower This may seem an extraordinary statement, but the EJECTOR MUFFLER is an extraordinary muffler.

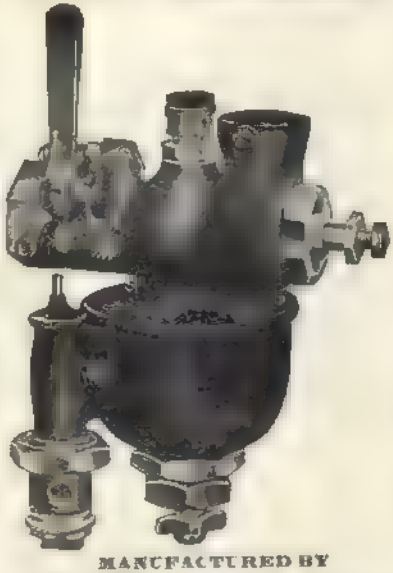
Cut-out Valve



Catalogue on request.

The Motor & Mfg. Works Co., Foot of Buffalo St., Ithaca, N.Y.

The "Sherwood" Carbureter



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Sherwood Manufacturing Company

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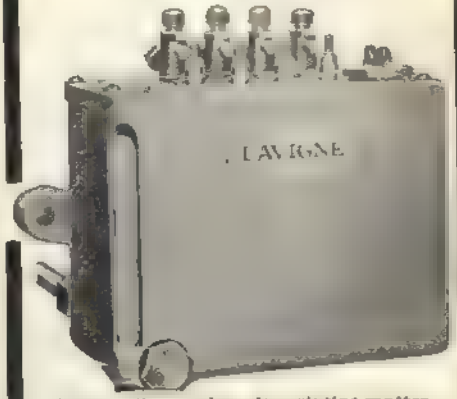
Write for catalogue and prices

The Lavigne Goods invite the Searchlight of Critical Inspection.

LAVIGNE FORCE FEED OILERS

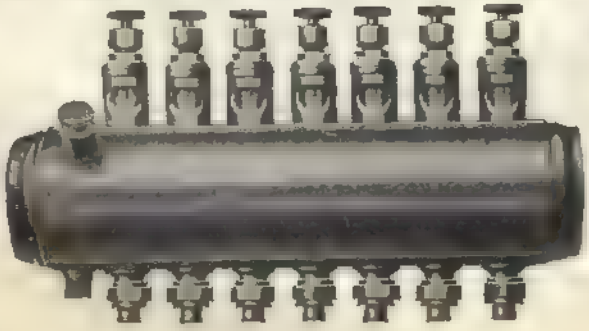
Are Always Reliable



Let us tell you why. Descriptive matter sent on request.

Lavigne Manufacturing Co.

DEPT "B" DETROIT, MICH



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Multiple Feed Oilers,
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CARBURETORS.

Write for Catalogue and Prices.

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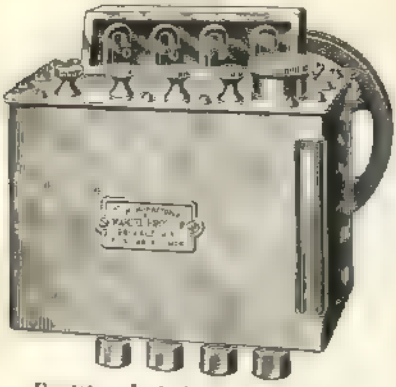

Positive Lubrication assured. Accurate and independent regulation of each feed. Constant Sight Feed. No liquids used in Sight Glass. Pumps governed automatically by speed of the engine. No priming necessary to start our lubricator

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46 Broadway, Buffalo, N. Y.

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FORCE FEED LUBRICATOR

"The Mark of a Good Motor Car"

Radiators Carburetors
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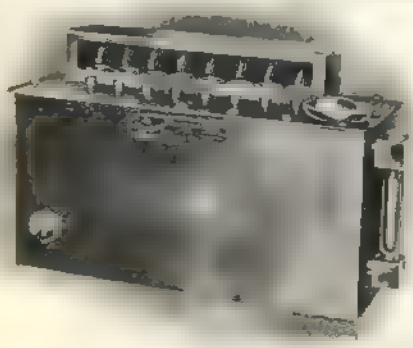

"Simple Talks about a Simple Oiler."

The Hancock Oiler

Valveless Force-feed.

ECONOMICAL? It certainly is! Does it make the oil any better than other oilers do? No! But it does feed the oil with absolute regularity, hot or cold, rain or shine. That's why! We have Circulars and a Catalog that tell more. You should have them. Write today.

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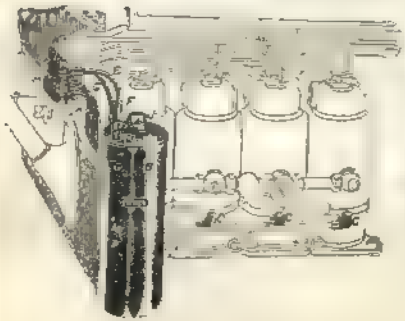

Essex Improved

Automatic

Lubrication is the only successful method of lubricating **Automobiles. Always ready** and never get out of **order. 30,000** in use.

G. B. ESSEX BRASS CO.
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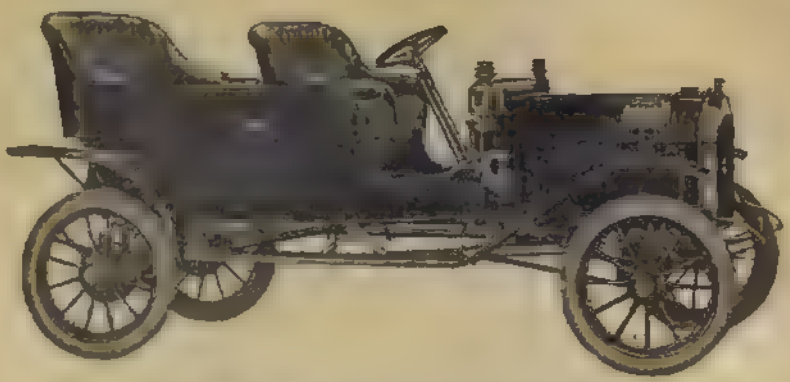


The Silent Northern 24.2 H. P. (A. L. A. M. rating) $1600

f. o. b. factory—includes full gas and oil lamp equipment.

For 1908 the Silent Northern embodies the same strong, enduring construction that has given it supremacy for five successive years, plus *MORE POWER*, due to large cylinders, larger valves and other refinements. Five years experience manufacturing this one type insures perfection in every detail.

¶ Style, efficiency, reliability, quietness the conspicuous features. As you are in search of these qualities any comparison you may make ***must*** confirm the fact that this is the greatest value the automobile world affords.

¶ Perfectly balanced motor — *the quietest, smoothest-operating,* simplest automobile engine made—supported at three points—the "Northern way" The mechanism cannot get out of alignment no matter how difficult the roads.

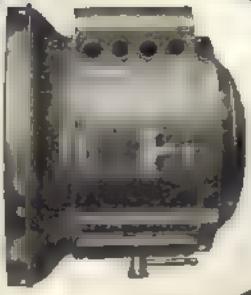
¶ Every part accessible and every part protected. Full control on steering column.

¶ Each detail of construction thoroughly tested out and successful. No guess work—no experiments. This car will prove for ***you*** as it has for others a genuine money-saver—and give you every comfort and pleasure possible to get from any machine regardless of price. Investigate. Find out for yourself. Send for the Catalogue.

NORTHERN

MOTOR CAR CO., DETROIT

Member A. L. A. M.



THE SIMPLER, THE STRONGER—ALWAYS

SOLARS are not only of simple, strong construction, but made of strongest material—heavy drawn brass. Their few parts add to their solidity. The way these parts are put together—riveted and screwed—never soldered—further fortifies Solars against the hardest knocks and jars on the road. ¶ Their construction is not only strong, but scientific. ¶ EXACT FOCUS that utilizes ALL the light. ¶ Each lamp thoroughly inspected before shipment. ¶ SOLARS ARE THE STRONGEST LAMPS MADE AND GIVE THE STRONGEST LIGHT.

BADGER BRASS MFG. CO., KENOSHA, WIS.

EASTERN BRANCH, 11TH AVE., 36-37 STS., NEW YORK CITY

The Eyes of the Night

SOLAR LAMPS

BADGER BRASS MFG. CO. KENOSHA, WIS.

EASTERN BRANCH 11th AVE., 36th-37th STS. NEW YORK

The Graves & Congdon Auxiliary Seat

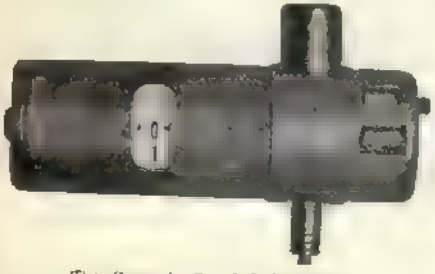
Graves & Congdon Body & Seat Company, Oak street, Amesbury, Mass., makers of automobile bodies, are also putting out an auxiliary seat which can easily be removed from the car if desired or folded up when not in use. It is furnished either in the white or finished It is a revolving seat and the

The Graves & Congdon Auxiliary Seat in two positions. Patent applied for

bracket by which it is attached to the side of the tonneau is of dove-tailed construction permitting instant removal if desired, and leaving no unsightly attachments after removal Two sizes are furnished These seats are not only of pleasing appearance, but very comfortable, being well upholstered

The Casgrain Speed Indicator

W H. Connell Instrument Company, 34-38 Columbia avenue, Boston, Mass markets a speed indicator which is quite different from other indicators in the method of indicating used. The indicator consists of a spiral of figures wound about a cylinder actuated by fluid current force. It is 28 inches long. The fluid is actuated by a simple paddle wheel,



The Casgrain Speed Indicator

which revolves the liquid. The faster the car goes, the faster the paddle wheel moves, and the steady flow of the liquid gives a steady reading of the speed. There is no chance for a jar or jolt to affect the reading of the instrument. All the parts are heavily made to stand the hard usage to which automobiles are subjected.

The reading of the instrument can be adjusted to any angle without disturbing the position of the driving shaft.

The knuckle joint is of the ball and socket type and made heavy to correspond with the rest of the instrument as to strength and durability. It will fit any make of car. The instrument lists at $50 and is guaranteed against defective workmanship or material

"Onward" Wrenches

The Onward Co., 531 West Fifteenth street, Chicago, Ill., which recently succeeded to the business of E. T. Harris, has added to its line of cycle hubs, etc., tempered steel

The "Onward" Wrench.

wrenches, which are notable for their strength, lightness and durability. A number of sizes are offered and special sizes can be furnisht on order

Sponges and Chamois Skins for Automobilists' Use

G. H. Worcester & Co., 35 Exchange street, Boston, Mass., are selling Rock Island sponges and high-grade chamois skins for the automobilists' use The sponges are claimed to be the best obtainable coming from the rocky shore of Nassau They vary in size from very large to as small as an orange; the large ones are the toughest because they are the oldest, and are universally used by the automobile people. Sponges are sold at auction by the natives to brokers, who buy for the large houses in New York and London. These people maintain their own packing houses, where the goods are prepared for market. The process of packing and preparing consists of drying and curing the sponges, then packing them in bales when they are then ready for shipment north. Their chamois skins are oil tanned.

"Healy" Inner Tube

The Healy Leather Tire Company, of 90 Gold street and 1906 Broadway, New York, have been selling for some time an inner tube which they claim is giving universal satisfaction. This tube is made of a very high grade of red rubber, having a peculiar composition which gives it extreme toughness They are wrapt in an unusual manner, which gives a smooth finish and nice appearance. The joint is also made by a new method which makes it so strong that it is absolutely impossible for it to separate. The company guarantees to repair all punctures in them free of charge for one year

Stewart & Clark Manufacturing Company, of Chicago, inform us that they have been granted the patent on the Stewart Speedometer.

DeTamble

Buggy-Type ENGINE

The one best engine for buggy-type automobiles; also suitable for any light runabout or light delivery wagon

Two cylinders 4x4 double opposed Air cooled 20 H. P. (approximate rating). Weight including flywheel, sprocket and carburetor, complete, 250 lbs. Length, 30 in., width, 16½ in., height 17 in.; depth without flywheel 14 in.

This is a high grade, carefully constructed engine, perfectly balanced and free from vibration. Every engine fully warranted to deliver the rated power and keep cool. Has been run at full speed for six hours without a sign of distress

Prompt Deliveries
Attractive Prices in Quantities

We Also Build The Famous

CARRICO *Air Cooled* ENGINE

4-Cyl. 4 x 4. 20-24 H. P.

The SPEED Carburetor

Guaranteed to give greater mileage per gallon of gasoline than any other carburetor.

Guaranteed to increase the power and the flexibility of any good motor, make it respond instantly to the slightest movement of the throttle, and to eliminate all jerky motion.

Guaranteed to give an absolutely constant and perfect mixture in any climate, any temperature, on any grade or around curves, with unequaled economy.

Purchase Price Refunded to any manufacturer or private owner who tries a Speed and is not convinced that we have precisely what we claim.

SPEED CHANGING PULLEY COMPANY 754 Washington St. INDIANAPOLIS, IND.

STEVENS-DURYEA

Limousines

We are preparing a limited number of Light 6 Limousine bodies for delivery, commencing the latter part of July. If you desire a Limousine for your Light 6 for use in the Fall, we would advise sending in your specifications through your dealer as soon as possible.

Comfort as well as style was kept in mind in the designing of these bodies. The curved windows in front afford the occupants within an unobstructed view. The bodies are of aluminum with round backs, seating four inside comfortably or five with a little crowding, and two in the front seat.

A limited number of Model R Limousines will also be ready in June. These bodies can be fitted to any Model R sold in 1905, 1906 or 1907. The inside seating capacity is three comfortably. On account of the limited supply, it is policy to place your order now.

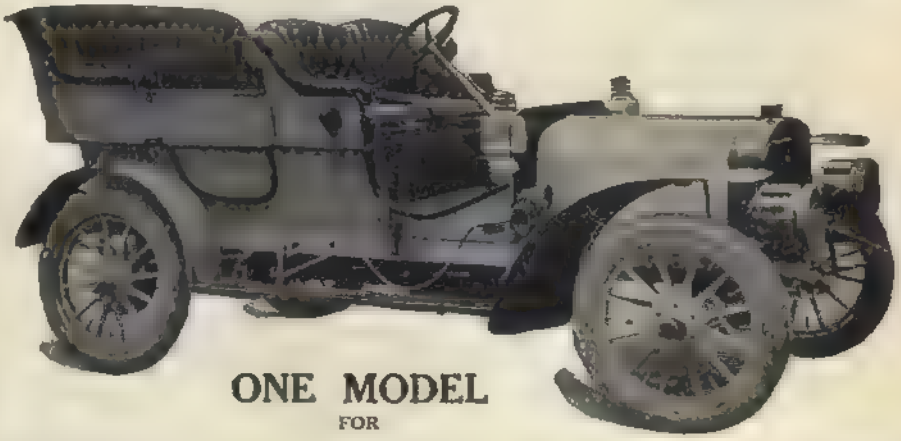
STEVENS-DURYEA COMPANY

700 Main Street

CHICOPEE FALLS, MASS., U. S. A.

Member A. L. A. M

Dorris 1907 Dorris



ONE MODEL
FOR

Runabout	30 Horse Power		$2500
Touring Car	30 "	"	2500
Limousine	30 "	"	3500

DORRIS MOTOR CAR CO., St. Louis

THE CARTERCAR

"THE CAR AHEAD"

In the "CARTERCAR" will be found the MINIMUM of MECHANISM thus eliminating most of the troubles encountered with automobiles. Experienced drivers will appreciate our claims of ABSOLUTE FREEDOM from TRANSMISSION TROUBLES, PERFECT CONTROL WITH ONE LEVER, avoidance of that jerky motion when starting or changing speed, and most important of all, no amount of rough handling will injure the friction transmission.

OUR CATALOGUE TELLS ALL ABOUT IT.

MOTORCAR COMPANY, Detroit, Michigan, U. S. A.

GARFORD PARTS

Makers of the Celebrated "Garford Chassis"

Steering Gear pinion and sector type also supplied

Brake—made in 3 sizes

ALSO

Motor Wagon Parts

We can promptly execute orders for steering gears, brakes, sprockets, motor hangers and other parts for motor wagons. They are suitable for all classes of commercial power vehicles, from the lightest to the heaviest. They are not "freak" components of a wonder working vehicle. They enjoy the rare distinction of having been thoroughly tested for some years past in the most varied and severe kind of commercial service

Circulars 2, 3, 5, 10 and 11 give information concerning them.

THE GARFORD COMPANY, Elyria, Ohio

Sales Manager, HAYDEN EAMES, Cleveland, O.

American Cars of Note

Model 8-K Roadster

ALL Stoddard-Dayton Models have gained distinction for *dependable* service. In competiton with cars *higher* in price, but of *less* practical motoring value, honors have been won and held.

Stoddard-Dayton

Model 8-K Roadster

40-45 H P Motor, valve in-head type. Four vertical cylinders, cast in pairs, 4 x 5 inches. Transmission, selective sliding gear type, three speeds forward and reverse *Price, $2,500 F. O. B. Dayton.* Extras: Magneto $200; Top $75.

Model 8-H Runabout

18 H. P. Motor, four cylinders, cast in pairs, 3 x 4 inches Transmission, selective sliding gear type, three speeds forward and reverse Wheel base, 92 inches. *Price, completely equipped with lamps, $1,700; with top, $1,750 F. O. B. Dayton.*

Model 8-H Runabout

SEND FOR 1908 CATALOG

THE DAYTON MOTOR CAR CO.

DAYTON, OHIO

Stanley's Metal Polish and Varnish-Lusta

John T. Stanley, 30th St., North River, New York, manufacturer of Shofo hand cleaner, etc., has recently added to his line a metal polish and a varnish renewer known as Varnish-Lusta.

Stanley's metal polish is claimed to be absolutely free from benzine, thus eliminating evaporation. It works quickly, gives a clear, even polish, and will not scratch the most highly polished surface

Varnish-Lusta is especially adapted for automobile bodies. Containing an abundance of linseed oil, is preserves the varnish and aids in preventing cracking and peeling.

1908 "Dietz" Lamps

For 1908 the R. E. Dietz Co., 60 Laight street, New York City, is presenting an extensive line of lamps, and we illustrate herewith two of the latest models, viz: the "Empire, Jr." side light, and the "Triumph" flare front headlight. This company also has a new marine searchlight which is described in the motor-boat department of this issue of the Journal.

The Empire Side Light can be fitted for gas or electric light, and is especially suitable for cars of the closed body type where a smart effect is desired. It is made in two sizes, the Empire and the Empire, Jr

The "Triumph" Flare-front Headlight.

The Triumph Headlight is made in two models one of which is shown herewith. This lamp is fitted with Bausch & Lomb Mirror Lens, and Silvered Aluminum Parabolic Door Reflector. This lamp employs one burner, and projects a brilliant light far ahead of the car, at the same time throwing a deflected light close to the car.

The "Alco" Type 12 Acetylene Burner

The feature of this new burner is in the fact that the side air ports are drilled at such an angle as to increase the efficiency of the injector action on which principle this burner operates. This burner is manufactured by the American Lava

The "Alco" Type 12 Acetylene Burner.

Co., Chattanooga, Tenn., and has been selected by five of the largest automobile lamp makers for their 1908 lamps.

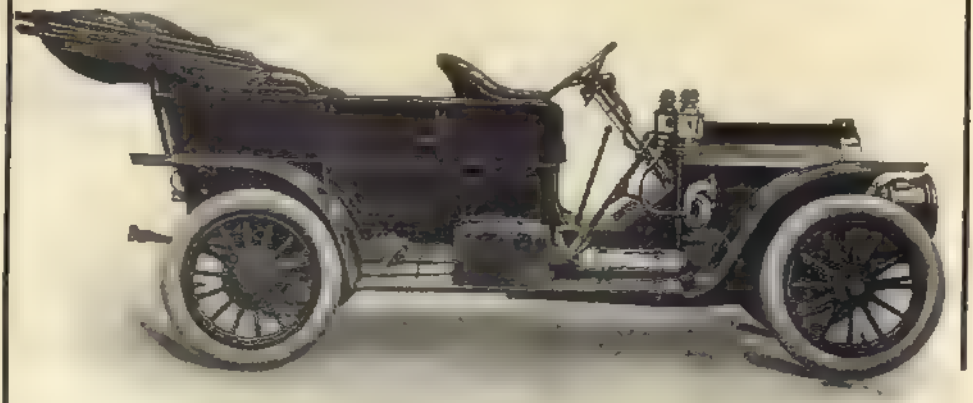
The burner is milled, drilled, etc., out of one piece of imported high grade lava,

The "Empire, Jr." Side Light.

and is mounted in a heavy brass pillar of standard height and thread. The pillar is heavily nickeled and polished. The burner is guaranteed not to carbonize, and the parts and proportions are such as to yield the maximum efficiency with respect to candle power per foot of gas consumed

A True Motor Car Story

The BEST motor car at a PRICE WITHIN REASON. This is Stoddard-Dayton policy of manufacture. Performance has always followed promise.



Stoddard-Dayton

An Output of 125 Cars in 1905 to 1200 Cars in 1907.

These are figures which prove the increasing faith of the motoring public in Stoddard-Dayton works—faith never misplaced.

Model S-F Touring Car, roomy and powerful. Provision is made for two folding seats in tonneau at extra cost, which converts this into a seven-passenger car.

Stoddard-Dayton Model 8-F, 30-35 H. P. Motor, four vertical cylinders, cast in pairs, 4¾ x 5 inches. Selective type transmission, three speeds forward and reverse. Enclosed fenders. Price, $2,500 f. o. b. Dayton, with oil lamps, horn and tool equipment.

Send for 1908 Catalog.

The Dayton Motor Car Co.

DAYTON, OHIO

EVERY STUDEBAKER CAR IS CAREFULLY TESTED BY ROAD EXPERTS, AND MUST PROVE ITS EFFICIENCY UNDER HARDER USAGE THAN THE AVERAGE CAR IS EVER CALLED UPON TO ENDURE

The road tests through which every

Studebaker

car is put, before it is ready for shipment, are indisputable evidence of the thorough manner in which Studebaker automobiles are constructed, and explain why they give such uniformly satisfactory service when touring over rough and difficult roads.

Studebaker automobiles are not tested on a smooth race track, but on a seven mile course over rough and hilly roads. As shown in the illustration, a seat is attached to the chassis, the rear of which is weighted down with sand bags weighing 1,000 pounds, to give a maximum load. The car is then taken out upon the course and every detail of its construction is thoroughly tested.

After a Studebaker car has been passed by our road experts the only thing remaining for the purchaser to consider is the style of the car desired and the price

Studebaker Automobile Co., South Bend, Ind.

BRANCHES

CHICAGO ... Studebaker Bros. Mfg. Co.
DENVER, COL. ... Studebaker Bros. Mfg. Co.
DALLAS, TEX. ... Studebaker Bros. Mfg. Co.
KANSAS CITY, MO. ... Studebaker Bros. Mfg. Co.
NEW YORK ... The Studebaker Bros. Co. of New York
PORTLAND, ORE. ... Studebaker Bros. Co. of Portland
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SALT LAKE CITY, UTAH ... Studebaker Bros. Co. of Utah

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BALTIMORE, MD. ... Auto Supply and Storage Co.
BOSTON, MASS. ... Premier Motor Car Co. and Supply Co.
BUFFALO, N. Y. ... Queens Land Co.
CLEVELAND, O. ... Central Automobile Co.
PHILADELPHIA, PA. ... Thomas Devlin & Co.
[illegible] ... New Co.
[illegible] ... Hart
SAVANNAH, GA. ... Adams & Warren
[illegible] ... Power Co.
[illegible] ... Bros.

Studebaker

"THE AUTOMOBILE WITH A REPUTATION BEHIND IT"

Electric Stanhope
Model 22b
Price $1250

FOR quick trips about town and into the suburbs—for all ordinary business and social requirements—here is a car which will grow daily in the esteem of its owner. ¶ Among vehicles of its type it is as supremely distinctive in smartness of style as is the $4,000 Studebaker among gasoline touring cars; it has the same thorough construction—the same smooth action. ¶ Simple in operation and always absolutely under control, this car can be driven by women with perfect safety through crowded streets.

Four speeds, from 3 to 14 miles per hour. Will carry two passengers over ordinary streets 40 miles on one charge. We also build a Special Stanhope, Model 13a, having a mileage of 50 miles, and a maximum speed of 18 miles per hour. This model is especially adapted to the requirements of physicians and other professional men.

Other Studebaker electric models are the Runabout, Victoria-Phæton and Coupe.

Send for our new catalog of electric and gasoline cars.

STUDEBAKER AUTOMOBILE COMPANY
SOUTH BEND, IND.

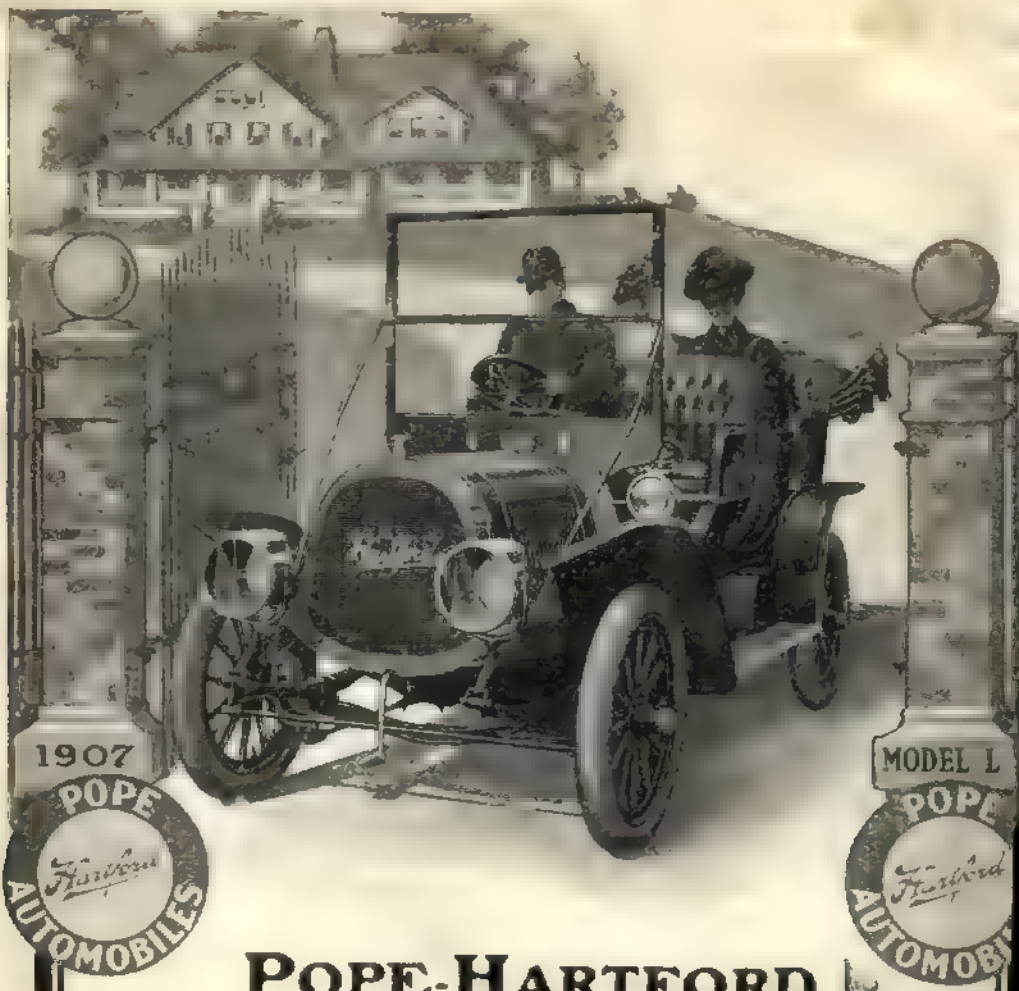
Members Association of Licensed Automobile Manufacturers

BRANCHES

CHICAGO, ILL., Studebaker Bros. Mfg. Co.
DENVER, COL., Studebaker Bros. Mfg. Co.
KANSAS CITY, MO., Studebaker Bros. Mfg. Co.
NEW YORK CITY, Studebaker Bros. Co. of New York
PHILADELPHIA, PA., Studebaker Bros. Co. of Pennsylvania
SAN FRANCISCO, CAL., Studebaker Bros. Co. of California
SEATTLE, WASH., Studebaker Bros. Co. of Pacific Northwest
SALT LAKE CITY, UTAH, Studebaker Bros. Co. of Utah

SELLING AGENTS

BALTIMORE, MD., Auto Supply and Storage
BOSTON, MASS., Preston Motor Car and Supply
CHARLESTON, S. C., Evans Electric Co.
CLEVELAND, O., Central Automobile Co.
PHILADELPHIA, PA., F. L. Ahl, Leeds & Co.
PITTSBURG, PA., J. E. McNary Co.
ROCHESTER, N. Y., A. V. Hart
SAVANNAH, GA., Kramer & Snyder
ST. LOUIS, MO., [illegible] Light & Power Co.
TOLEDO, O., Kirk Bros. Automobile Co.



POPE-HARTFORD

PRICE FULLY EQUIPPED $2750.

EXTENSION TOP $150 EXTRA.

Find, if you can, a car with as clean a record. The personal experience of every Pope-Hartford owner in 1906 is your assurance and safeguard for 1907. Immunity from trouble, unfailing uniformity of performance—these two vital virtues have been rendered doubly certain in Model L by the remarkable record of Model F.

Last year's best has been immeasurably bettered. You have in the 1907 Pope-Hartford a 25-30 H. P. car as close to mechanical infallibility as unsurpassed Pope facilities and invaluable Pope experience can possibly make it.

Model L Runabout Equipment $2750.

Two bucket seats in front, third seat removable.

Pope Manufacturing Company

HARTFORD, CONN.

Members Association Licensed Automobile Manufacturers.

Studebaker

No "show off" or "stunt" cars, but high class reliable cars built to satisfy the buyer on good roads or bad roads, up hill, or on the level

THREE GASOLINE MODELS

Studebaker "30," Model A, Touring Car, Speed Car, Limousine, Landaulet
Studebaker "30," Model H, Touring Car, Speed Car, Limousine, Landaulet
Studebaker "40," Model B, Touring Car, Speed Car, Limousine, Landaulet

The design of our Model B, an entirely new car, while adapted to the requirements of a larger car, follows very closely that of our smaller cars, Models A and H.

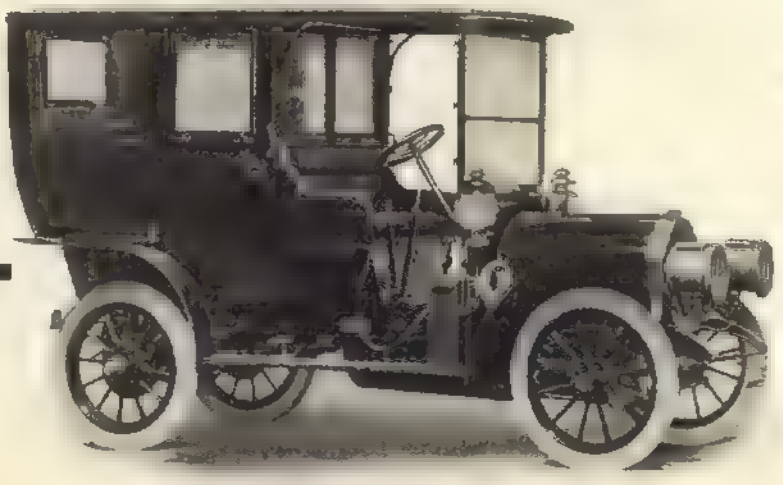
The chassis of all three cars is the Garford, which perhaps more than any other represents the highest attainment of the *orthodox* art. This conviction led to our financial interest in the Garford Company.

Our qualification as experts in the design and equipment of a body is unquestioned. As the manufacture of automobiles is becoming more and more standardized the design of body and the equipment now receives from the prospective buyer more attention than heretofore and the discriminating purchaser should not fail to visit our exhibit at the

Licensed Show in Madison Square Garden, New York, November 2-9, Space 31.
Combined Show in Coliseum, Chicago, Space 3-B.

STUDEBAKER AUTOMOBILE CO., South Bend, Ind.

MEMBER ASSOCIATION LICENSED AUTOMOBILE MANUFACTURERS
General Office, CLEVELAND, OHIO.



EVERY STUDEBAKER CAR IS CAREFULLY TESTED BY ROAD EXPERTS, AND MUST PROVE ITS EFFICIENCY UNDER HARDER USAGE THAN THE AVERAGE CAR IS EVER CALLED UPON TO ENDURE

The road tests through which every

Studebaker

car is put, before it is ready for shipment, are indisputible evidence of the thorough manner in which Studebaker automobiles are constructed, and explain why they give such uniformly satisfactory service when touring over rough and difficult roads.

Studebaker automobiles are not tested on a smooth race track, but on a seven mile course over rough and hilly roads. As shown in the illustration a seat is attached to the chassis, the rear of which is weighted down with sand bags weighing 1,500 pounds, to give a maximum load. The car is then taken out upon the course and every detail of its construction is thoroughly tested.

After a Studebaker car has been passed by our road experts the only thing remaining for the purchaser to consider is the style of the car desired and the price

Studebaker Automobile Co., South Bend, Ind.

BRANCHES

CHICAGO, ILL., Studebaker Bros. Mfg. Co.
TOLEDO, OHIO, Studebaker Bros. Mfg. Co.
CLEVELAND, OHIO, Studebaker Bros. Mfg. Co.
KANSAS CITY, MO., Studebaker Bros. Mfg. Co.
NEW YORK CITY, Studebaker Bros. Co. of New York.
PORTLAND, ORE., Studebaker Bros. Co. of Oregon.
SAN FRANCISCO, CAL., Studebaker Bros. Co. of California
SEATTLE, WASH., Studebaker Bros. Co. of Northwest
SALT LAKE CITY, UTAH, Studebaker Bros. Co. of Utah

SELLING AGENTS

BALTIMORE, MD., Auto Supply and Storage Co.
BOSTON, MASS., Peerless Motor Car and Supply Co.
[illegible], TENN., [illegible]
[illegible], N. Y., [illegible]
PHILADELPHIA, PA., [illegible] Woods & Co.
PITTSBURG, PA., [illegible] Navy Co.
ROCHESTER, N. Y., A. J. Harr
SAVANNAH, GA., [illegible] Wagen
SPRINGFIELD, OHIO, Union Electric Light and Power Co.
TOLEDO, OHIO, Kirk Bros. Automobile Co.

NEW 1907 CARS

EIGHT-CYLINDER 50-60 H. P. TOURING CAR

Motor, four cylinders each side 90° apart.
Chassis, $4000.00.

TOWN CAR

Elegantly finished Landaulet or Limousine body.
Complete, $2600.00.

LITTLE TOURING CAR

Especially for professional use.
Substantially built throughout of the highest grade materials.
Price, $1000.00.
THE ONLY AMERICAN CAR TAKEN UP AND MANUFACTURED IN EUROPE.

FIVE-TON GASOLINE TRUCK

Best design of any commercial car in America.
Only the highest grade of materials and the best class of workmanship enter into its construction.
Chassis, $4000.00.

1000-POUND LIGHT DELIVERY

The only LIGHT DELIVERY properly geared for city and suburban service.
Price, complete, $1600.00.

HEWITT MOTOR CO.

6-8-10 E. 31ST ST. NEW YORK CITY

EVERY STUDEBAKER CAR IS CAREFULLY TESTED BY ROAD EXPERTS, AND MUST PROVE ITS EFFICIENCY UNDER HARDER USAGE THAN THE AVERAGE CAR IS EVER CALLED UPON TO ENDURE

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Studebaker Automobile Co., South Bend, Ind.

BRANCHES

CHICAGO, ILL., Studebaker Bros. Mfg. Co.
DENVER, COL., Studebaker Bros. Mfg. Co.
DALLAS, TEX., Studebaker Bros. Mfg. Co.
KANSAS CITY, MO., Studebaker Bros. Mfg. Co.
NEW YORK, N. Y., Studebaker Bros. Co. of New York
PORTLAND, ORE., Studebaker Bros. Co. of Oregon
SAN FRANCISCO, CAL., Studebaker Bros. Co. of California.
SEATTLE, WASH., Studebaker Bros. Co. Northwest
SALT LAKE CITY, UTAH, Studebaker Bros. Co. of Utah.

SELLING AGENTS

BALTIMORE, MD., Auto Supply and Storage Co.
BOSTON, MASS., Premier Motor Car and Supply Co.
CHARLESTON, S. C., Citizens Electric Co.
CLEVELAND, O., Central Automobile Co.
PHILADELPHIA, PA., Automobile Sales & Co.
[illegible], Del., Motor Car Co.
[illegible], N. Y., A. A. Barr.
SAVANNAH, GA., Kraemer & Wroten.
ST. LOUIS, MO., Union Electric Light and Power Co.
TOLEDO, O., Kirk Bros. Automobile Co.

QUALITY

THE LIGHT

MOTOCYCLES

We use THOR Motors in all our Models

2½ H. P. Chain Transmission $185.00
3 H. P. Gear Transmission $225.00

Great value for little money. Up to date in every feature, Simplicity Power, Speed. Not the "just as good" kind, but the **BEST** money and brains can produce. Prompt deliveries. Catalogue on request.

THE LIGHT MFG. & FOUNDRY CO.

Hanover and 4th Sts., Motor Cycle Dept. Pottstown, Pa.

NOT ONE TIRE COMPLAINT THIS YEAR

Thomas Flyer

Hundreds of cars in daily use for months. Some have traversed thousands of miles over roughest kind of roads. One made over 8000 miles. Another 10,000 miles. **Not one complaint** of tire trouble.

REASON found in splendid policy of providing 1500 pounds surplus tire capacity by equipping cars with larger tires and wheels at additional cost to us of over $100. Front tires 36 x 4 inches. Rear tires 36 x 5 inches.

PROVES again that we will not only eliminate all structural troubles but eliminate practically all operating troubles such as tire troubles by use of big tough tires and ignition troubles by the use of a double ignition system.

All this is submitted for the cool and critical buyer—the conservative business man. Regardless of price no other large car can present such a grand record.

60 H. P. Thomas Flyer, $4000, f. o. b. factory
40 H. P. Thomas Forty, $2750, f. o. b. factory

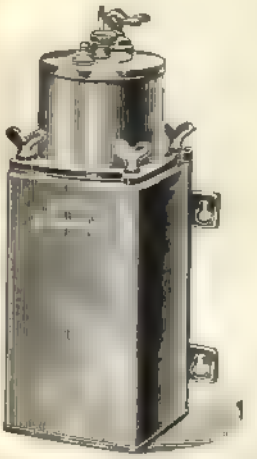
E. R. THOMAS MOTOR COMPANY

MEMBER A.A. A. M.

BUFFALO, N. Y.

DIETZ
"HANDY" GENERATORS

SIMPLEST AND MOST SATISFACTORY
OF ACETYLENE GAS ON
THE MARKET

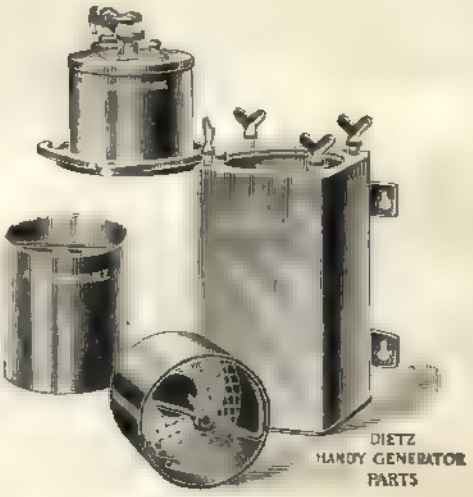


DEITZ HANDY GENERATOR

Dietz Generators present a neat appearance, the parts are easy of access and a powerful flow of gas is produced, which guarantees a steady light of high candle power.

Simplicity is their keynote—they are composed of four parts as shown in cut.

Are made in two sizes, Nos. 5 and 6, holding two and five pounds of carbide respectively.



DIETZ HANDY GENERATOR PARTS

CATALOGUE UPON REQUEST

"THE OLD RELIABLE"

DIETZ MOTOR LAMPS

R. E. DIETZ COMPANY

LARGEST MANUFACTURERS OF LAMPS IN THE WORLD

60 Laight St. NEW YORK, U. S. A.

ESTABLISHED IN 1840

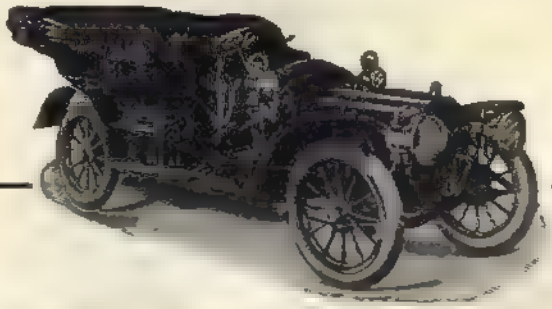
The Quickest Way to Satisfy Yourself About the Thomas

Is to ask the conscientious unbiased advice of Thomas owners in your town or city.

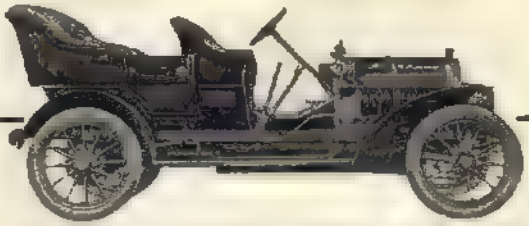
You'll find Thomas owners in every automobile centre, men of prominence and integrity. Their opinion is invaluable.

Ask them if it is not a fact that they have found the Thomas-Flyer under both good and bad conditions and endurance tests unfailingly reliable.

There are more than a thousand such owners throughout the country who will



60 H. P. THOMAS FLYER, $4000



40 H. P. THOMAS FORTY, $2750

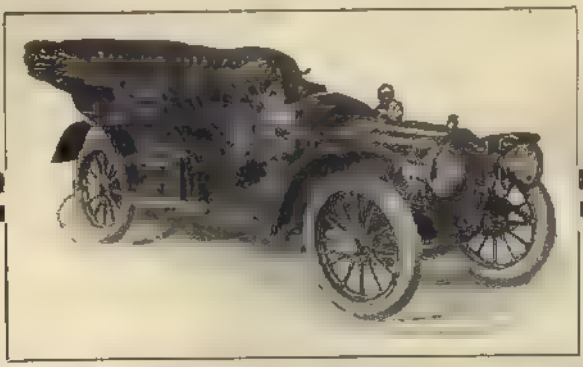
tell you promptly and emphatically that they have found the Thomas to be above everything else, the most reliable and trustworthy car built.

Write for the 1907 Catalogue

E. R. Thomas Motor Co., Buffalo, N. Y.

MEMBERS A. L. A. M.

The 60 H.P. Thomas Flyer



Price $4,000.00 F. O. B. Factory

THOMAS GROWTH

In Six years the Thomas organization has progressed from 3,200 square feet to nearly 300,000; from 40 employees to 1,500; from 50 cars a year to nearly 1,400

All this makes for reliability!

So do the four great concrete factories, with the finest equipment in the world, built during the past year.

So do the expert services of the most eminent engineers in Europe, working in unison with our own great mechanical force.

So does the experience of more than a thousand owners—eliminating in every-day use every possible slightest defect.

So did the superb record of 1906—when ordinary Thomas touring cars won every world's record and endurance contest of note in which they entered—putting Thomas construction to a final, conclusive and overwhelming test.

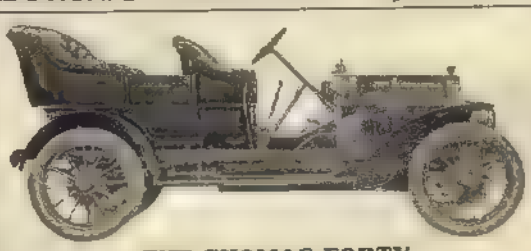
So did the splendid achievement of the Thomas Racer in the Vanderbilt Cup—when it defeated every other American car and won the unquestioned American championship.

Reliability that comes from the costliest chassis; reliability that comes from over $100,000 more spent in the refinement of the 1906 Thomas than for any other car in the world, reliability that comes from the experience of a multitude of cars operating all over the country; reliability that comes from engineering experience, enjoyed by no other car in the world—that's what you're buying when you buy a Thomas.

Study both Thomas cars—the Flyer and the Forty—as unquestioned leaders in their class.

EVEN THE ENORMOUSLY INCREASED CAPACITY WILL NOT FULLY SUPPLY THE ALREADY DEVELOPED DEMAND—SEE YOUR THOMAS AGENT.

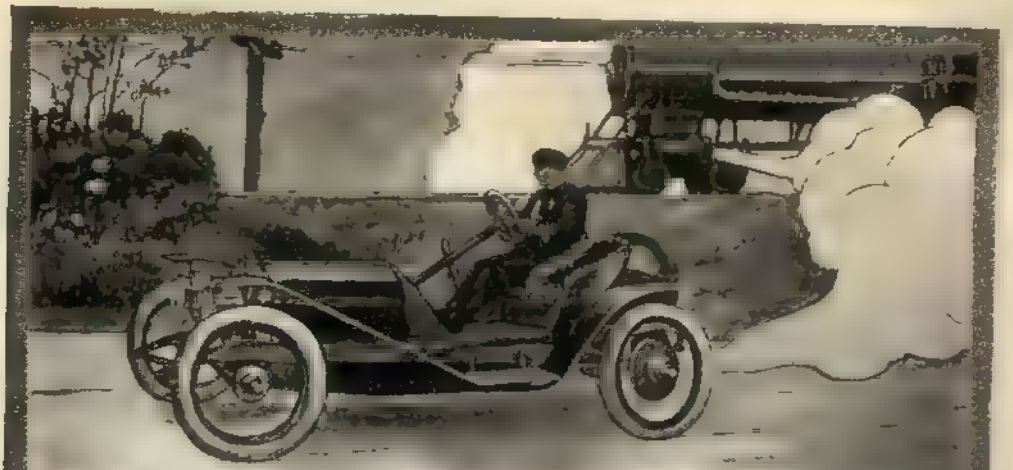
E. R. THOMAS MOTOR CO., Buffalo, N. Y.



THE THOMAS-FORTY

40 H. P., $2,750, F. O. B. Factory

A Fit Companion to the Superb 60 H. P. Thomas Flyer



B. L. M.

A GREAT many manufacturers have ceased to build racing cars to enter in the Vanderbilt Cup Race and kindred events, because **it cost too much** It does cost heavily to produce the great lightness with great strength; that exquisite and permanent adjustment combined with great power, which gives the extreme speed a racer must have; it **does cost** heavily.

THE B. L. M. is a racing machine; 24-horse power racer, capable of a speed so extreme that, in all probability, you would never drive it to a point near its full capacity. It is built with all the care lavished on the Vanderbilt Cup Racers. Its engine is imported from France all the essential parts are made by **Krupp**. Its light weight, only 1,400 lbs gives it a flexibility so perfect that a girl can drive it without mishap in the most crowded streets. It is the **safest** car in the market for city use. Its lightness enables many a car owner to run it for a year **without a cent of tire cost.**

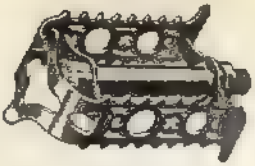
IT **does** cost to build a racing machine. The B L M. costs far more to build than any other American car of its type and horse power. But through that cost we have achieved a car that stands unequaled, that gives the purchaser, at its price, $3,500, far more motor car value than any other American car. Motor enthusiasts, men who **know** motor cars as you know the details of your own business, have snapped up the 1907 output so quickly that there are few cars unsold.

MEN of affairs are selecting the B. L. M. as a means of locomotion between their homes and their offices. It is much faster than an express train It serves a business purpose and at the same time provides the greatest sport in the world. It is never "missed" as a train may be, causing an hour or more of delay. It is **reliable,** as a racing car **must** be, built as it is, to stand far more strain than any private owner will give it; built to stand the terrific strain of **racing,** it feels no strain from mere road use.

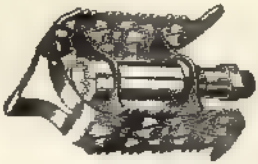
WE are not advertising the B. L. M to sell this year's output, but to make its marvelous qualities known to you. We would like to put its principles of construction before you in our catalog, a form much more ample than any advertisement could be. Drop us a line asking for Catalogue No 23. It's free.

B. L. M. MOTOR CAR CO.

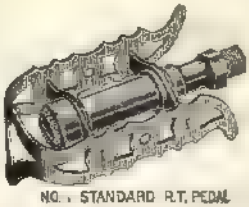
29 WEST 42d STREET NEW YORK CITY



NO. 3 STAR R. T. PEDAL



NO. 9 BRIDGEPORT R. T. PEDAL



NO. STANDARD R.T. PEDAL

The Recognized Standard

Standard Pedals

Because of their unvarying excellence and permanent value, they are to be found on all high-grade wheels.

Made for men's, women's or children's wheels.

We are also makers of the famous **"Diamond E" Spokes and Nipples; "Sager," "Star" and "Export" Toe Clips and the "Breech-Block" Spark Plug.**

THE STANDARD CO.,

TORRINGTON, CONN.

THOR

Must be on the Motor in your Motor Cycle if it is genuine, and a winner.

Supplied by the following manufacturers:

Reading Standard Cycle Mfg. Co., Reading, Pa.
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Aurora Automatic Machinery Company

AURORA, ILLINOIS, U. S. A.

BRANDENBURG & CO., Selling Agents, Chicago and New York

Sager Cushion Fork

Easily attached to any bicycle or motorcycle. Absorbs all jars, jolts and vibration.

Send for catalogue.

J. Harry Sager

Rochester, N. Y.

TO THE TRADE

Bicycle Line Most concerns can supply you with staple articles for a complete Bicycle, but we have added to this line a specialty of Tubings, Lugs, Stems, Stays and other fittings. All makes of Cups and Cones, to help the repair man.

Come to us with your troubles, and we will supply you. See Catalogue 1907.

Auto Line Tires, Tubes, Lamps, Generators, Goggles, Carburetors, Timers, Coils, Switches, Mufflers, Jacks, etc., at **Rock Bottom Prices.**

Write for Catalogue and Discount Sheet.

Progressive Cycle & Automobile Supply Co.

81 Chambers St., N. Y.

BRADLEY MOTOR CYCLES

Single and Double Cylinder, $200 and $275

C. E. Bradley Motor Co.

268 Diamond St., Philadelphia, Pa.

JOHN S. LENG'S SON & CO.

33 Murray Street, NEW YORK

CARRY A COMPLETE STOCK OF

BICYCLES - TIRES - SUNDRIES

Careful attention paid to Prompt Shipment

Persons Saddles

Are said to be

The Best in The World

PERSONS MANUFACTURING COMPANY,

Worcester, Mass.

Mayo Motor Cycles

The Most Perfect Mechanically Constructed.

Power and Speed to Spare.

MAYO DAMPER CO., Pottstown, Pa.

THE HARLEY-DAVIDSON MOTORCYCLE,

a winner wherever it competes.

Booklet on request.

Harley-Davidson Motor Co.

Milwaukee, Wis.

Torpedo Motor-Cycles
Our own Spring fork
Ride comfortably
Powerful motor
Easy to handle
Does the work
On road and track.

THE HORNECKER MOTOR MFG. CO., Whiting, Ind.

Motor Cycle Supplies

HORNS, SADDLES, PARTS

Send for our Catalogue

F. A. BAKER & CO.

37 Warren St., N. Y.

Who would think of building Bicycles, Coaster Brakes, Lawn Mowers, Sewing Machines and etc., etc., without using The STAR BALL RETAINERS therein?

WHO, tell us?

THE STAR BALL RETAINER CO
LANCASTER, PA., U. S. A. and
BERLIN S. O. 36. GERMANY

Convert Your Bike Into a Motorcycle

THE ERIE 2 H. P. attachment fits any frame without alteration. Easily attached by anyone. A hill climber. 1500 in use.

2 & 3 H. P. MOTORCYCLES, MOTORS, CASTINGS, ETC.

SEND STAMP FOR EITHER CATALOGUE

MOTORCYCLISTS Send 15 one-cents stamps for new book "THE MOTORCYCLE." It is a book of the hanisn, care, operation how to get more power etc. Name make of motorcycle for low price on accessories for same.

Motorcycle Equipment Co., 4 Lake, Hammondsport, N. Y.

The Autocar

Touring-car, Type XIV, 30 horse-power, $3000

Four vertical cylinders. Sliding-gear, roller-bearing transmission. Three speeds forward and reverse. Direct shaft drive. 122-inch wheel base. *Three point unit suspension of power plant.*

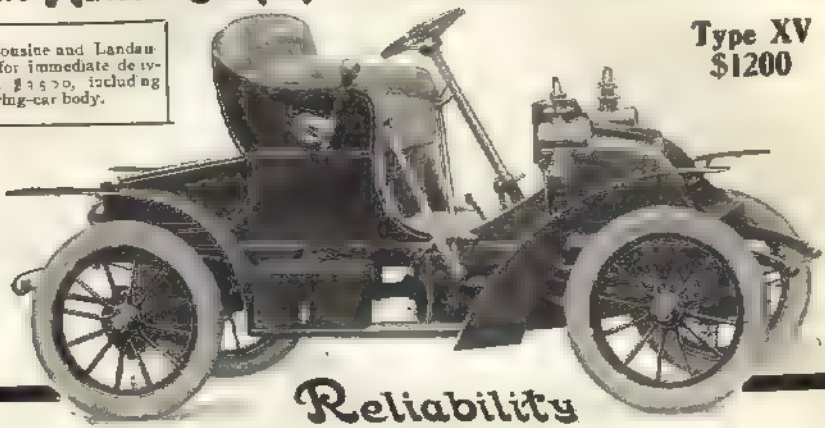
Autocar Runabout, Type XV, 12 horse-power, $1200

Two horizontal opposed cylinders; motor under hood. Sliding gear roller bearing transmission. Three speeds forward and reverse. Direct shaft drive. *Three point unit suspension of power plant*

Write for The Autocar Book and representative's address.

The Autocar Company — Member Association Licensed Automobile Manufacturers. 12th St., Ardmore, Pa.

Limousine and Landaulet for immediate delivery, $4500, including touring-car body.



Type XV
$1200

Reliability

"No More Cranking"
Start your Motor from the Seat

The Triumph

Stands alone, as the ONLY and absolutely reliable

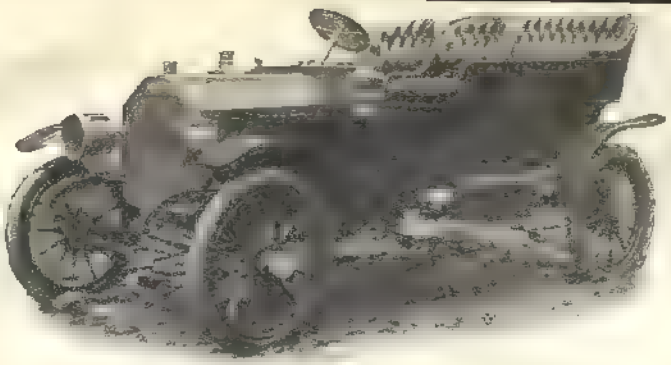
Self-Starting Car

—And the ONLY car which has a self-contained automatic Self-Starting Motor. At the recent Auto Shows THE TRIUMPH CAR demonstrated its superiority and proved to be the only practical Self-Starting car shown. "Push the Lever and the Motor Starts" whether the car has stood for months or hours. Any lady may drive The Triumph without any fear of having to crank the motor. There is beauty of Design, Simplicity of Control and Perfection of Workmanship and Material in every car.

Triumph Motor Car Company, Dept. A, Chicago, Ill.

THE TRIUMPH CAR is built in two styles:

Model A 30 H.P.
4-cyl. Runabout, $2800.00
Model C—30 H.P. 4-cyl.
Touring Car, $3000.00



BLOMSTROM 30S.

1907 New Cars.

Everything Latest. Everything Best.

5-Passenger Touring Car, $2250.00. 3-Passenger Runabout, same chassis, $2100.00.
110-inch Wheel-base. Tires 32 x 3½ inches New motor, 4-cylinder, vertical, 4-cycle, water-cooled, 30 H. P. at 1000 R. P. M. **Blomstrom's Own Design, Latest, Best. New Clutch: Blomstrom's Own; Latest, Best.** Selective Sliding Gear on Hess-Bright ball bearings, Tempered Nickel Steel Gearing, Bevel Gear Drive, Front Wheels on ball bearings.
Complete Equipment—Mats, Horn, Tools, 5 Lamps, ready for the road.
The Blomstrom 30 is not built merely to get the purchaser's money. It is built to give the buyer satisfaction on the road.

BLOMSTROM MANUFACTURING COMPANY, DETROIT, MICH.

AMERICAN MORS

A CAR BUILT FOR PERMANENCE

Built to do everything that a perfect automobile should do, and it does it.
The American Mors is the triumph of the best French and American Engineers.

Licensed by the Société Anonyme d'Electricité et d'Automobiles, "MORS," Paris, France

GUARANTEED FOR ONE YEAR

14-18 H. P., $3,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All Bodies of the Most Perfect Designs—Complete Equipment
Send for our Catalog. Address Dept. D

THE ST. LOUIS CAR COMPANY, Automobile Department, St. Louis, Mo.
New York. 1706-1718 Broadway, cor. 54th Street

BUILT BY THE
LARGEST BUILDERS OF STREET CARS IN THE WORLD

The Autocar

Touring-car, Type XIV, 30 horse-power, $3000

Four vertical cylinders. Sliding-gear, roller-bearing transmission. Three speeds forward and reverse. Direct shaft drive. 122-inch wheel base. *Three point unit suspension of power plant.*

Autocar Runabout, Type XV, 12 horse-power, $1200

Two horizontal opposed cylinders; motor under hood. Sliding gear roller bearing transmission. Three speeds forward and reverse. Direct shaft drive. *Three point unit suspension of power plant*

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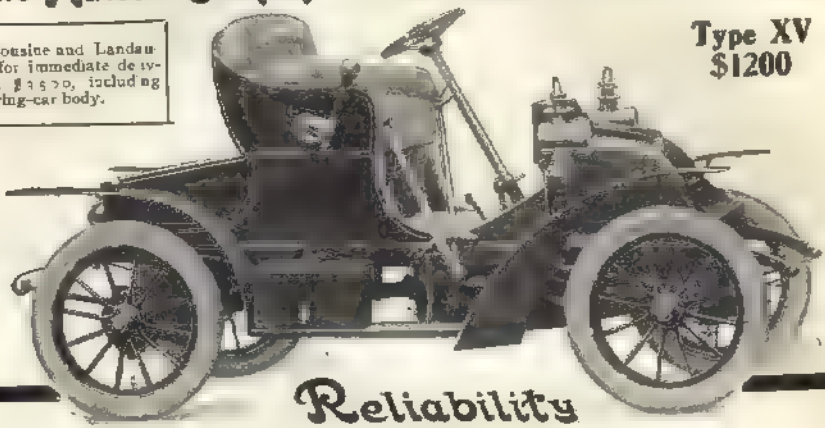
Limousine and Landaulet for immediate delivery, $4500, including touring-car body.



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Stands alone, as the ONLY and absolutely reliable

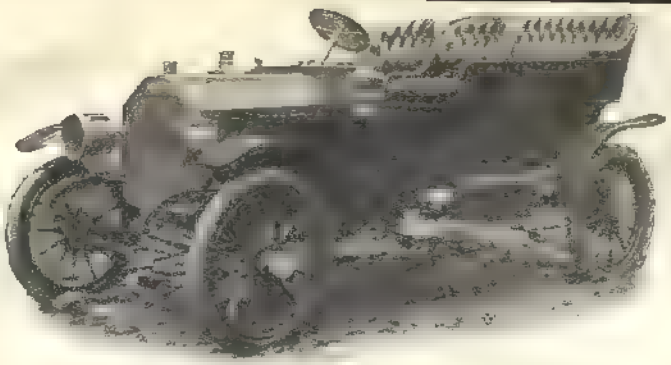
Self-Starting Car

—And the ONLY car which has a self-contained automatic Self-Starting Motor. At the recent Auto Shows THE TRIUMPH CAR demonstrated its superiority and proved to be the only practical Self-Starting car shown. "Push the Lever and the Motor Starts" whether the car has stood for months or hours. Any lady may drive The Triumph without any fear of having to crank the motor. There is beauty of Design, Simplicity of Control and Perfection of Workmanship and Material in every car.

Triumph Motor Car Company, Dept. A, Chicago, Ill.

THE TRIUMPH CAR is built in two styles:

Model A 30 H.P.
4-cyl. Runabout, $2800.00
Model C—30 H.P. 4-cyl.
Touring Car, $3000.00



BLOMSTROM 30S.

1907 New Cars.

Everything Latest. Everything Best.

5-Passenger Touring Car, $2250.00. 3-Passenger Runabout, same chassis, $2100.00.
110-inch Wheel-base. Tires 32 x 3½ inches New motor, 4-cylinder, vertical, 4-cycle, water-cooled, 30 H. P. at 1000 R. P. M. **Blomstrom's Own Design, Latest, Best. New Clutch: Blomstrom's Own; Latest, Best.** Selective Sliding Gear on Hess-Bright ball bearings, Tempered Nickel Steel Gearing, Bevel Gear Drive, Front Wheels on ball bearings.
Complete Equipment—Mats, Horn, Tools, 5 Lamps, ready for the road.
The Blomstrom 30 is not built merely to get the purchaser's money. It is built to give the buyer satisfaction on the road.

BLOMSTROM MANUFACTURING COMPANY, DETROIT, MICH.

AMERICAN MORS

A CAR BUILT FOR PERMANENCE

Built to do everything that a perfect automobile should do, and it does it.
The American Mors is the triumph of the best French and American Engineers.

Licensed by the Société Anonyme d'Electricité et d'Automobiles, "MORS," Paris, France

GUARANTEED FOR ONE YEAR

14-18 H. P., $3,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All Bodies of the Most Perfect Designs—Complete Equipment
Send for our Catalog. Address Dept. D

THE ST. LOUIS CAR COMPANY, Automobile Department, St. Louis, Mo.
New York. 1706-1718 Broadway, cor. 54th Street

BUILT BY THE
LARGEST BUILDERS OF STREET CARS IN THE WORLD

NEW 1907 CARS

EIGHT-CYLINDER 50-60 H. P. TOURING CAR

Motor, four cylinders each side 90° apart.
Chassis, $4000.00.

TOWN CAR

Elegantly finished Landaulet or Limousine body.
Complete, $2600.00.

LITTLE TOURING CAR

Especially for professional use.
Substantially built throughout of the highest grade materials.
Price, $1000.00.

THE ONLY AMERICAN CAR TAKEN UP AND MANUFACTURED IN EUROPE

FIVE-TON GASOLINE TRUCK

Best design of any commercial car in America.
Only the highest grade of materials and the best class of workmanship enter into its construction.
Chassis, $4000.00.

1000-POUND LIGHT DELIVERY

The only LIGHT DELIVERY properly geared for city and suburban service.
Price, complete, $1600.00.

HEWITT MOTOR CO.

6-8-10 E. 31ST ST. NEW YORK CITY

325 Miles Continuous Running Through Snow, Mud and Ice on the High Gear in 12 Hours and Forty Minutes!

And Not a Drop of Oil or Water Put Into The Machine During The Whole Remarkable Run!

Only an instance of what the new Craig-Toledo is doing almost every day in the year. Only an instance of what you may expect in the first Craig Toledo you see—and the Craig Toledo you buy.

This is the World's record for a lengthy run on the high gear—but that is not particularly important.

The point is that this terrific trip illustrates the extreme flexibility and superiority of the Craig - Toledo power plant which is mounted on a patented three point suspension.

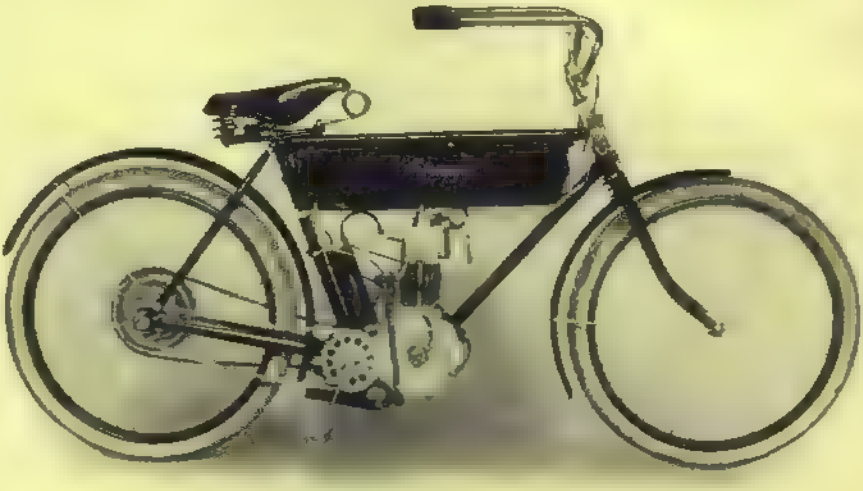
Why not inquire further into the merits of this light, speedy, sturdy Roadster?

Write to

The Craig-Toledo, $4,000.00

THE CRAIG-TOLEDO MOTOR COMPANY, TOLEDO, OHIO

The Triumph Motorcycle



The Latest Thing In Motorcycles

—a new and original design—a triumph in motorcycle engineering—the result of two solid years of study, experiment and exhaustive tests.

This machine gives a degree of ease and comfort to the motorcycle rider hitherto unkown. It rises to a point of efficiency and strength without vibration that motorcycle designers have always dreamed of but never before reached. Its low center of gravity, low riding position and long wheel base are tremendously strong points that help to make it a most superb and matchless product.

It has a special patented tank that carries the batteries, gasoline and oil. It is equipped with positive control through grip. Sight feed lubrication. Brown company sprocket absolutely eliminates a long noticeable feature.

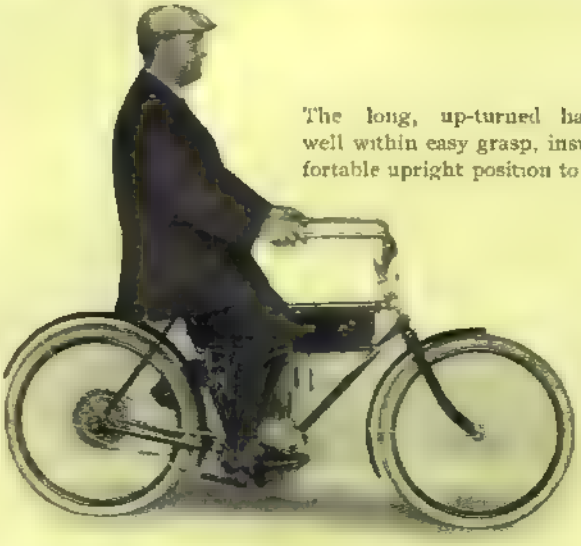
Profit by immediate delivery. On the day we get your order we ship the goods

For booklet and further information address

Excelsior Automobile Supply Co.

C-1436 Michigan Avenue, Chicago

The Triumph Motorcycle



The long, up-turned handle-bars, well within easy grasp, insure a comfortable upright position to the rider

The long wheel base 53 inches, greatly reduces the usual road shocks; and the low center of gravity gives greater stability and lessens tendency to side slip

The long handle bars lessen the vibration from front wheel and consequently wrist fatigue

Note the low saddle position—both feet easily reach the ground when machine is not in motion.

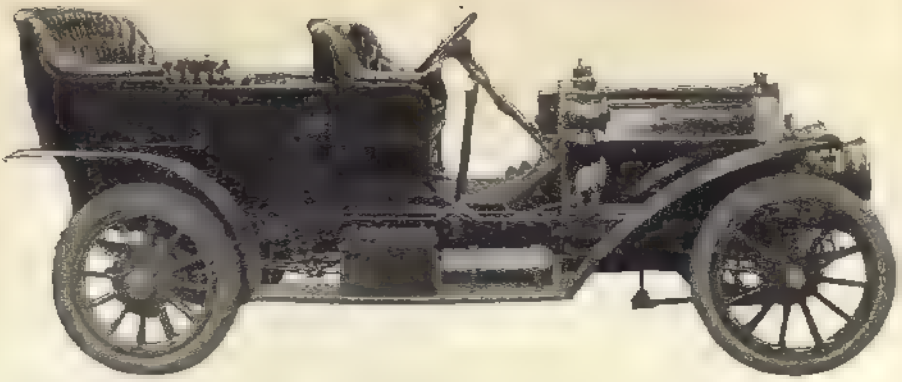
Excelsior Automobile Supply Co.

C-1436 Michigan Avenue, Chicago

TYPE C

PENNSYLVANIA

50



¶ Embodying Chrome Nickel Steel, Annular Bearings, Aluminum Body. *Equal to the Best. Impossible to get better.*

$2800.00

FIFTY H. P.

¶ 4¾ x 5¼ valve in head. Hollow Crank, Eccentric Ring Oiling, Large Bearings, Perfectly Balanced.

Pennsylvania Auto Motor Co.

Bryn Mawr : : Pennsylvania

but is claimed to have such theoretical perfection of throat and single stand pipe shape as to give a suitable mixture for all speeds. The axles are all made by Timken to Oldsmobile drawings and specifications.

SPRINGS.

For Model Z the front springs are semi-elliptic, 40x2½ inches, and the rear, full-elliptic 42x2½ inches. On Model M, the front are semi-elliptic, 36x2¼ inches, and the rear, full-elliptic, 38x2¼ inches.

For Model X, front, semi-elliptic, 36x2 inches; rear, semi-elliptic, 38x2¼ inches. The full-elliptic springs are fixt on top to the chassis frame brackets, and are revolutely mounted on the rear axles, and fixt length struts are fitted to the chassis frame brackets and have ball bearings at the rear and universal joints. The frames for Models Z and M are dropt and are flat on top for Model X.

Models Z and M have exterior and interior rear-hub drum brakes, separate drums, with an air-space between, and use no transmission brake, while Model X uses internal brake-shoes only for the rear hub-drum, and has one brake-drum on the line-shaft.

STEERING AND CONTROL.

The steering gear is a multiple thread screw on the lower end of the steering shaft in a trunion-nut journaled in boxes sliding in the slotted arms of the globe-end steering bell crank, in all the 1908 Oldsmobile models. The spark and throttle control in all cases is by ratchet retained hand levers on top of the steering wheel, with plunger accelerating pedals on the foot-board. All foot-boards have two large pedals, the left pedal disengaging the clutch only, while the right pedal applies the ordinary brake only.

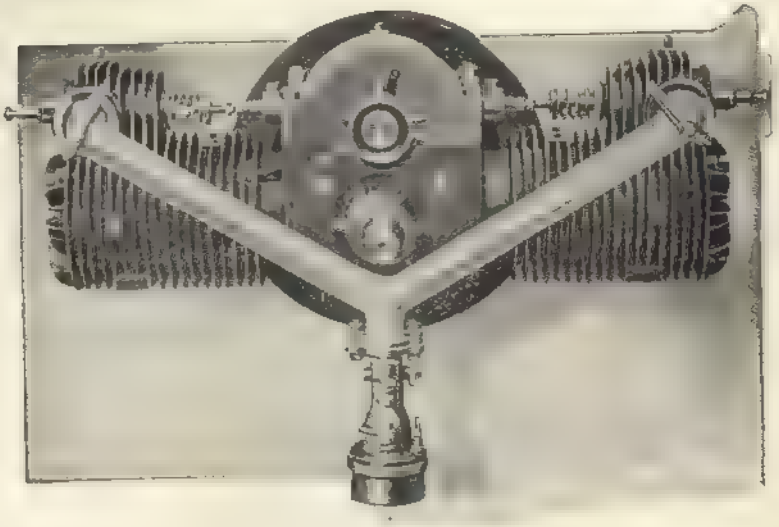
There are in each model two outside hand-levers. The outer lever is pulled backward to first disengage the clutch and then apply the emergency brakes. The inside hand lever works the speed change All brakes are applied thru eveners.

1908 Horseman Limousine. This photo shows the latest model of the well known pioneer high wheeler No. 9, fitted with a closed body and storm curtains for winter use. The 1908 models are similar in mechanical details to that of last year, the company stating that it finds no reason for making any change.

Whitney Mfg. Co., Hartford, Conn., has improved its facilities for 1908 and, as its chain sizes and styles are all well established, its 1908 improvements consist only in greater accuracy, better hardening, improved materials, more rigid inspection, greater strength and better finish. Increased facilities will ensure prompt deliveries this season, and it expects to fill orders for Whitney keys and cutters the day they are received.

In this and the last five issues of the Journal, about 60 1908 cars have been described, and as we have on hand a number of each of these issues, we offer to start new subscriptions with the June number, in which the first 1908 car descriptions appeared, if the price, $2.00, is sent at once before our stock of back numbers is exhausted. Cycle & Automobile Trade Journal, Forty-ninth and Market streets, Philadelphia.

Universal Buggy Type Engine



The One Best Engine For Buggy-Type Automobiles

Suitable for any light runabout or light delivery wagons, but designed especially for buggy type rigs.

Two cylinders, 4x4 double opposed.

Conservative power rating, 10-12 H. P.

Weight, including flywheel, 180 lbs.

Over all dimensions, including spark plugs: length, 30"; wihth, 16¾"; depth, 17". Depth without flywheel, 11½".

Perfectly balanced. Entirely free from vibration.

Air-cooled, and **cooled** beyond question. Has been run at full speed for six hours without a sign of distress. Big exhaust valves. Careful construction. Best materials.

Every engine fully guaranteed to deliver the rated power and keep cool.

Prompt delivery on any quantity to those who order promptly. Attractive prices in quantities.

SPEED CHANGING PULLEY COMPANY 754 Washington St. INDIANAPOLIS, IND.

Shop or Garage

The "HISEY-WOLF" Portable Electrical Hand or Breast Drill

Can be carried anywhere. Made in sizes, ¼ in., ⅜ in., ½ in., ¾ in. capacities. Weights 8 to 19 lbs. respectively. Power from any lamp socket, direct or alternating current. Sent on trial

Also Portable Electrical Grinders of all kinds.

The HISEY-WOLF MACHINE CO., Cincinnati, O.

Climax Batteries

for AUTO and BOAT use.

The longest lived dry cell in the market.

High Grade Auto Equipment

Send for catalog and dealer's prices.

SIBLEY & PITMAN

26 Warren St. New York.

VAN AUTO JACKS

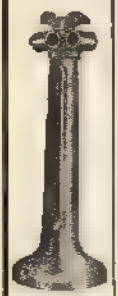
Simple, Strong and Durable

Model No. 2 is a new design. By turning small ratchet, back and forth motion of handle raises or lowers car.

Manufactured by

Vanderpool Bros.

SPRINGFIELD, O.



Model No. 1 List Price, $ 75

Model No. 2 List Price, $3 25

PORTABLE CRANE AND HOIST

BUILT OF STEEL

Light but zenith of strength. All wheels on roller bearings. Rolls easy.

JUST THE THING for Auto Manufacturers, Repair Shops, Garage

All sizes. — Special sizes made to order.

Get the Circular I.

Patd. Dec. 12th, '05.

WM. S. NICHOLLS, 252 Broadway, New York

Dunn Semi-Dry Cells

Standard Size No. 6 Now 40c. Was 60c. and worth it.

Trade Discounts, etc., on application.

Geo. M. Terry Co., Sales Agents, 92 Chambers St., N.Y.C.

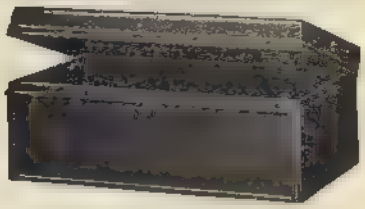
The Atlantic Co., 59 Haverhill St., Boston

The Fairbanks Co., 701 Arch St., Philadelphia

Manufactured only by

The Semi-Dry Battery Company, Harrison N. J., U. S. A.

Send for "Sparks for Motor Ignition" Free



METAL TOOL AND BATTERY BOXES

FENDERS, FORGED IRONS, HOODS

TANKS AND GARAGE FLOOR PANS

HAYES MFG. CO.

Maybury and Grand Trunk Railway, DETROIT

Automobile Accessories

Auto Wind Shields, Auto Bumpers, Tire Irons and Chain Tools

Satisfaction guaranteed.

A letter asking for particulars and prices will bring proof aplenty.

THE ADAPT MACHINERY COMPANY

1624-1634 Wabash Avenue

Chicago, Ill.

Good Dealer Agents Wanted.

STANDARD JACK

Easy-Acting Always Dependable

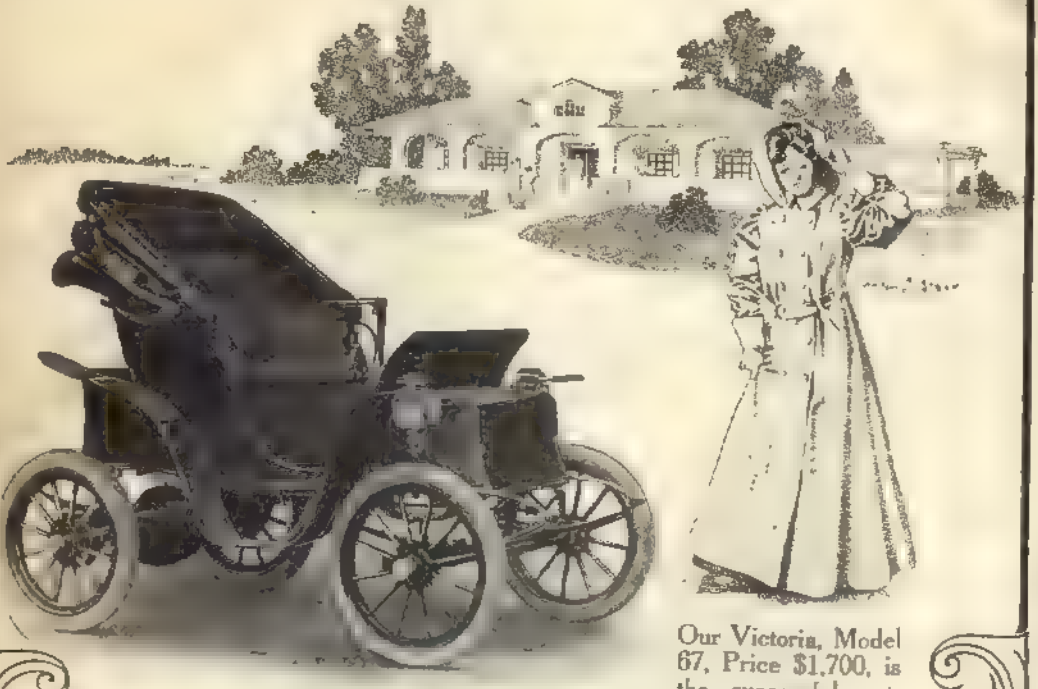
LIGHT—COMPACT—SAFE

EVERY PART GUARANTEED

COOK'S STANDARD TOOL CO.

Kalamazoo, Mich.

Model 67, Pope-Waverley Victoria Phaeton



Our Victoria, Model 67, Price $1,700, is the successful outcome of a long series of efforts to embody in this deservedly popular type of carriage certain distinctive ease-inducing features.

POPE Waverley ELECTRICS

¶ Among these we may mention the dropped sill or floor support, which materially lessens the distance between the floor of the car and the ground, thus reducing to a minimum the fatigue incidental to repeatedly entering and leaving the carriage. The seat also is low, broad and deeply upholstered, in every way calculated to provide a degree of physical and mental comfort not easily obtainable in other conveyances.

¶ *We have agents in all principal cities. We make Runabouts, Stanhopes, Surreys, Open and Closed Chelseas, Physicians' Road, Station and Delivery Wagons. Electric Trucks to Specifications.*

WRITE FOR CATALOGUE

Pope Motor Car Co.

Waverley Department **INDIANAPOLIS, IND.**

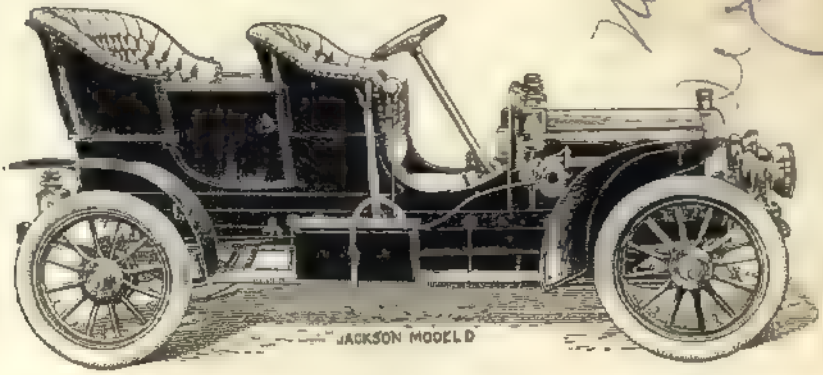
POPE Waverley ELECTRIC AUTOMOBILES

THE VALUE IS THERE!

Ask anyone who knows and who is not prejudiced by trade jealousy

The popularity of this car has grown by leaps and bounds

"No sand too deep"
"No hill too steep"



The Model D Jackson

Price $1500. Two cylinders, horizontally opposed, under the hood, giving much of the effect, in looks, of a four-cylinder car. Horse Power, 24. Bevel-gear drive. Wheels, 32x3½. Ample seating capacity for five persons. Complete equipment of horn, lamps, etc.

JACKSON AUTOMOBILE CO.
JACKSON, MICH.

Waltham Runabout

FRICTION-DRIVE

$350

A car of small cost and great accomplishment.

MODEL B. R. 4 H. P. $350.

WRITE FOR FULL PARTICULARS
(and enclose this ad.)

WALTHAM MFG. CO., Waltham, Mass., U. S. A.

The Continental Car for 1908
NOW READY

CONTINENTAL RUNABOUT IN THE SEALED BONNET TEST

MORE POWER, BEAUTY AND SIMPLIFICATION

The following records established by the Continental cars in quality and reliability

April [illegible] to free for all race 1 [illegible] track [illegible] Brandywine [illegible]

May [illegible] Established record between New Haven and Springfield 43 miles, 1 hour 8m. Per track Fair Ground [illegible] 1 hour 8m. 30 minutes

May [illegible] Made Automobile Meet at [illegible] Fair Ground [illegible] entire [illegible] thereon 50 miles, Stock [illegible] Day [illegible] The [illegible]

May 30th [illegible] Continental [illegible] defeated Oldsmobile [illegible] 25 miles track race [illegible] Time 1:59

June 6th [illegible] Continental car [illegible] New York to Albany and [illegible] perfect score

June 19th [illegible] Continental Record contest the Continental was first car to finish 1000 miles perfect score [illegible] without [illegible] adjustment and with seals unbroken

June 8th New Haven, Ct. to Cleveland, O., [illegible]

June 10 to 22d Wide showing made in the Glidden Tour

The [illegible] to be measured Style and up-to-date [illegible]

Agencies for 1908 now being appointed Write for information

CONTINENTAL AUTOMOBILE MFG. CO., New Haven, Conn.

New York Branch E. J. KEHOE Manager, 2784 Webster Avenue, Bronx, and 650 Broadway near 32d, Manhattan

Wayne

"The Car that Takes You Through."

Maintenance in Motoring Means Much.

THAT'S where the Wayne owner profits. Abolition of unnecessary mechanism and the use of none but the best materials banish that bugaboo of motorists—the cost of upkeep.

The small number of wearing parts, the ample strength of engine and delivery of power where it should go, all tend to minimize the danger of trouble and consequent outlay for replacements.

Saving in Maintenance is only one of the Wayne strong points, however. Absolute reliability at all times, ease of operation, and the high ratio of horse power in comparison with weight gives a sense of security and satisfaction that adds to the joy of motoring, marking the Wayne as the **Greatest Value Ever Offered for the Money.**

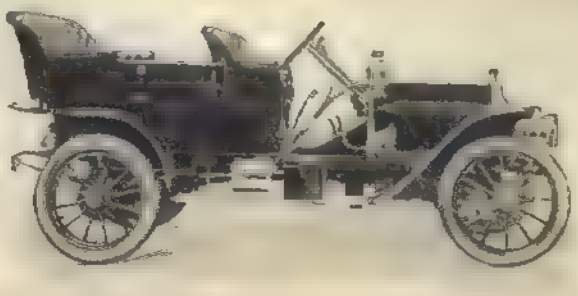
$3,500—Model R, 50 H. P. 7 Passenger Pullman Tourist.
$2,500—Model N, 30-35 H. P. 5 Passenger Car.
$2,500—Model K, 35 H. P. 5 Passenger Car.
$2,500 Model N, 30-35 H. P. Gentleman's Roadster.

DELIVERIES GUARANTEED.

Let us send you a catalog describing our line,

Wayne Automobile Co. Dept. 9

DETROIT, - Michigan



THE INCOMPARABLE WHITE

THE CAR FOR SERVICE

A SEASON OF WHITE VICTORIES

White Bulletin No. 14 which has just been issued, gives a resumé of the victories of the White in the important contests of the year. The various chapters of the Bulletin bear the following headings:

The White in World-Wide Use
The President at the Wheel
Continued Government Favor
First Place in London Town Carriage Contest
Perfect Score in Harrisburg Endurance Run
Fastest Time in Wilkes-Barre Hill-Climb
Fastest Time in Cleveland Hill-Climb
Fastest Time in California Hill-Climb
Perfect Scores in Sealed Bonnet Contest
Officially Observed Non-Stop Run of 1871 Miles
Only Perfect Score in Quaker City Regularity Run
Fastest Time of the Season on the Track
Perfect Score in California Endurance Run
Officially Declared Most Efficient Car
Wins Third "Desirability Contest"
The Glidden Tour—A Clean Sweep for the White

Write for a copy of this interesting publication.

THE WHITE COMPANY

CLEVELAND, OHIO

THE INCOMPARABLE WHITE

THE CAR FOR SERVICE

Fastest Time in Wilkes-Barre Hill-Climb

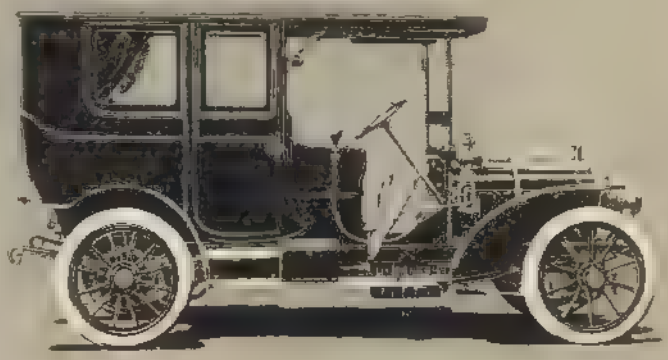
In the Wilkes-Barre Hill-Climb, held on May 30th, a stripped 30 horse-power Model "G" White Steamer made the climb up "Giant's Despair" in 1:49⅘. This time is ten seconds faster than the best record made by a gasoline car. Practically all of the more prominent makes of cars were represented, there being over 50 contestants in this classic event.

Our record was made in a trial against time. We could not compete against anything else because the Contest Committee of the Wilkes-Barre Automobile Club barred us from all the regularly scheduled events, including the "free for all," because, as the President of the Wilkes-Barre Automobile Club informed us, in a formal letter returning our entries, "It was found that a large number of gasoline entries could not be received were steam cars allowed to compete in the gasoline events."

THE WHITE COMPANY

CLEVELAND, OHIO

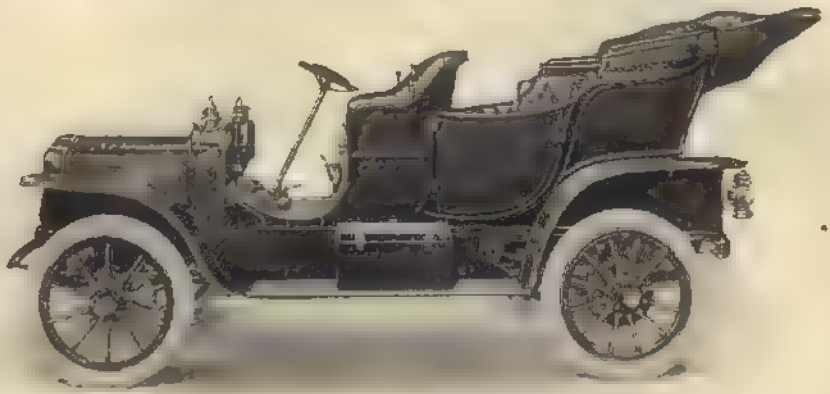
Packard



PACKARD MOTOR CAR COMPANY
DETROIT, MICHIGAN

The Incomparable WHITE

The Car for Service



The Model "H" White Steamer

Above is shown our Model "H", the smaller of the two models which we are offering this season. In commendation of this car, we would say that it follows quite closely in its general construction our Model "F" which we built last season.

The Model "H" has a somewhat shorter wheelbase than our last year's car and is proportionately lighter. It is rated at 20 steam horse-power and its price is $2500, f. o. b. Cleveland. Only a limited number of our entire season's output of this car remains unsold.

As regards the new features, the Model "H" is provided with the new system of regulation and with a number of minor improvements which are found also in our high-powered Model "G".

Write for Literature.

THE WHITE COMPANY

CLEVELAND, OHIO.

Winchester

MODEL "E"

With a dial five and one-half inches in circumference and all of it before you at once; with black figures on white porcelain; with even graduations between each mile; with never a "wiggle" to the indicating hand, can there be any doubt of the "ease of reading" a Winchester Speedodometer?

You learn to read the dial of the Winchester as you do your watch—instinctively, by the position of the hand; there's no *searching* for the numbers.

That is just one good point about the Winchester. It has all the others. We tell about them and describe the instrument inside and out in a new catalog we have published. If you have any idea of buying a speed indicator you should have this book. It will give you valuable information. Just say, "Send me Catalog O."

WINCHESTER SPEEDODOMETER CO.

(Formerly McGiehan)

1557 Broadway New York, U. S. A.

MODEL "A"

Winchester Odometer

This is the trip and season mileage recorder which is employed by some of the largest owners of commercial vehicles in the United States. They depend upon its unfailing accuracy to get the mileage of their wagons from which they may estimate their actual costs. Send for Catalog 02.

Winchester

Winchester Speedodometer

With the High-Speed-Record Hand. No extra charge!

The High-Speed-Record Hand is an auxiliary indicator showing the maximum speed attained by the car. It is carried by the regular indicating hand to the highest speed made and remains there when the car slows down or stops. A touch of the button brings the record hand back to whatever speed the car is then making.

It is of inestimable value to the motorist who is summoned by the constable to stop.

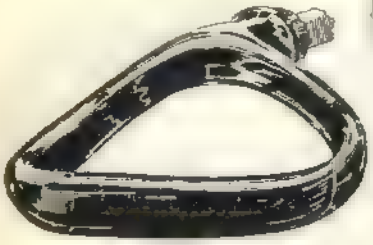
There are many details in connection with the Winchester that you should have and that we'll be glad to send you. Just say,

Send me Catalog "O"

WINCHESTER SPEEDODOMETER CO.
1557 Broadway New York, U. S. A.

D. & L. Brass Automobile Mountings and Specialties

Douglas & Lomason Hardware Co., Detroit, Mich., make an extensive line of brass goods for the automobile trade. Their line includes side door handles, hood handles, lamp brackets, baggage rails, door hinges, dash, toe and heavy deck rails, etc., of all sizes and descriptions.

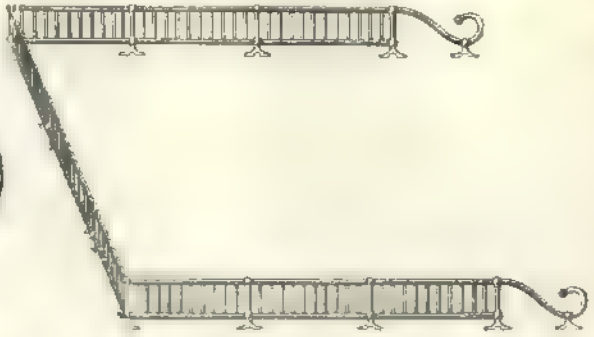


The Douglas and Lomason Side Door Handle.

As an example of one of their products in the line of side-door handles, we show herewith Style No. 783. The outside width of this handle is 3⅛ inches. It is fitted with permanent or loose escutcheons. Its list price is $1.42 per pair. Less expensive ones are furnished from 88 cents to $1.03 per pair; all made of polisht brass.

In order to keep up with the demand for heavy deck rails for use on inclosed cars, they have produced Style No. 59, a popular type, which is illustrated herewith. It is made of polished brass, with either round or square corners. The list price is $29.50 each.

The concern also makes all kind of brass work upon special order from customers' specifications.



No. 59 Heavy Deck Rail.

The "Presto" Detachable Rim

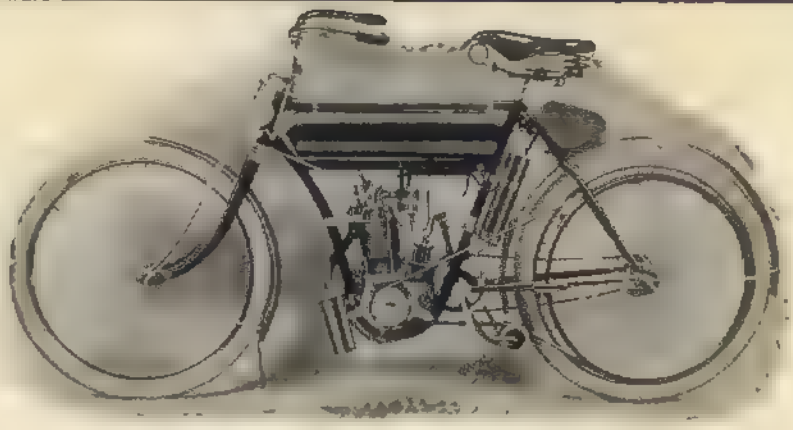
The Presto detachable rim is the product of the Presto Detachable Auto Rim Company, Lincoln Trust Building, Jersey City, N. J. No tools are required in its manipulation, and nothing is taken off the wheel except the rim with the tire attached. The wheels have 3-16 inch permanent steel rims shrunk upon them. These steel rims have inverted L-shaped slots placed at equal distances around their peripheries. On the under side of the detachable rims are flat projections similar to nuts which enter the L-shaped slots of the rim upon the wheel. There are four one-half inch steel bolts placed at equal distances around the wheel, which go through the felloe and rim of the wheel, quartering it. These steel bolts have strong brass springs, so that when the nuts on the detachable rims are in their positions the steel bolts instantly and automatically enter openings in the steel rims, securely locking them and the wheel together.

It requires but a few moments to remove the rim. By simply pulling out the steel spring bolts and giving them a slight turn from their direct pull they are held out of locking engagement; then the rim is turned about three-quarters of an inch in the opposite direction of the wheel's movement, when it can be freely taken off. The permanent and detachable rims each have a slight bevel, which easily releases them from their original bearings.

The "Presto" Detachable Rim, showing rim removed from the wheel.

Any steel rim with a flat under surface can be used in connection with the "Presto" attachments. The inner tube can be inflated on or off the wheel.

The Empire Compound Co., 370 Pearl street, New York City, are marketing the Empire Valve Seating Compound and are putting it up in large tubes, listing at 75 cents each. The compound is like a thick paste and is not affected by age or climate. It contains no emery and, therefore by its use all danger of dropping emery, which might work into bearings, is avoided. The manufacturers call attention to the importance of keeping values properly seated if full power is expected from the motor.



1907 MODEL. Price $185.00

YALE - CALIFORNIA MOTOR CYCLE

"A Demonstration is a Revelation."

Comfort and Reliability.

Speed 4 to 40 Miles per Hour. A Card will bring our catalogue

We Ship Promptly.

THE CONSOLIDATED MANUFACTURING CO.,

Station "B". Toledo, Ohio

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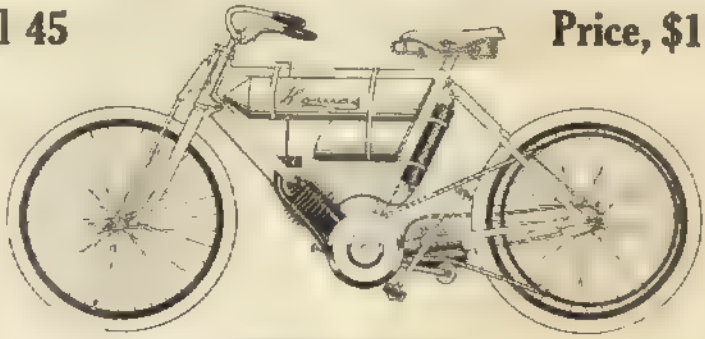
Model 45 Price, $175.00

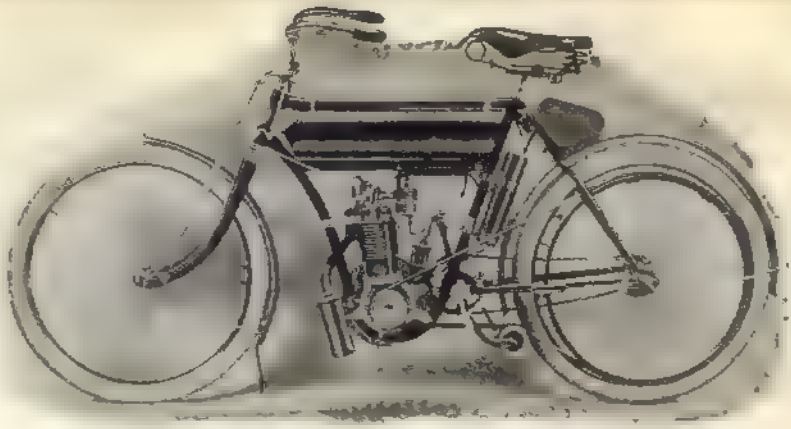


THOMAS AUTO-BI

IMMEDIATE DELIVERY

MR. AGENT, you ought to handle an **up-to-date** motorcycle. **You ought to have a sample now.** Our catalogue will **prove to you** why we have the best motorcycle ever built for the use of the average man. Write for catalogue and terms.

THE THOMAS AUTO-BI CO., 1453 Niagara St., Buffalo, N. Y.



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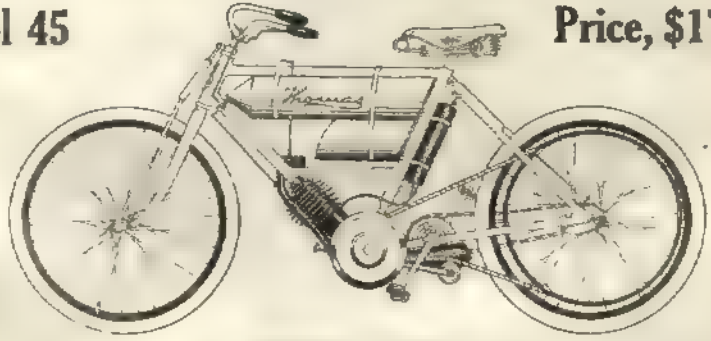

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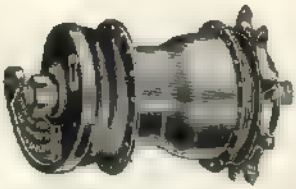
THE THOMAS AUTO-BI CO., 1453 Niagara St., Buffalo, N. Y.

Corbin Hubs for 1907

"The Best By Test"



Corbin Duplex Brake
MODEL No. 6

Fits any wheel. Special models for chainless wheels and motorcycles with Front Hubs to match.

Corbin Two Speed Brake
MODEL No. 10

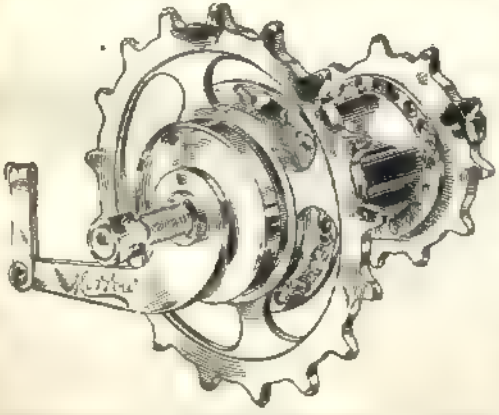
No shifting levers. Will run backward. Change of speed is made automatically.

CATALOGUE ON REQUEST

THE CORBIN SCREW CORPORATION
NEW BRITAIN, CONN.

YOU WILL NEVER KNOW
what real comfort and pleasure is, until you have your motorcycle fitted with

The Morrow Coaster Brake

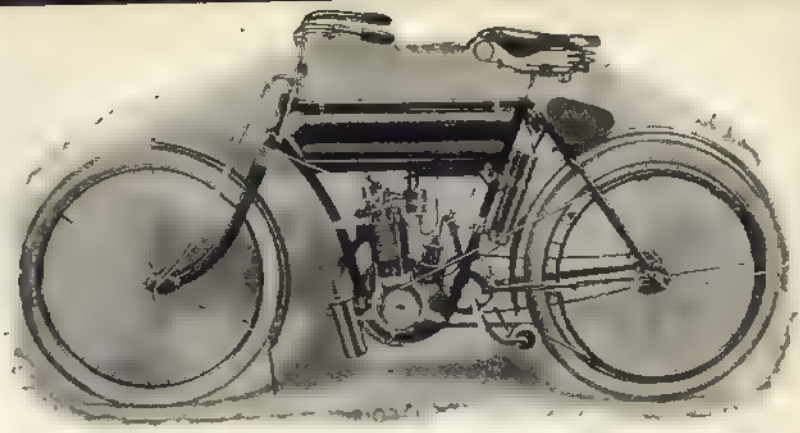


The principle on which it is constructed is the same which has made the bicycle brake famous, so you are sure of good service.

The chain drive brake is illustrated, but the MORROW is made for belt driven motorcycles, as well.

Don't delay in equipping your machine with the MORROW, but act at once. They can be seen at all dealers.

ECLIPSE MACHINE COMPANY, Elmira, N. Y.



1907 YALE-CALIFORNIA MOTOR CYCLE---Price $185

In the Endurance Contest New York to Providence, R. I. July 30 and 31, 305 miles. Three Yale California Motor Cycles entered and all three came through on time at every control making a showing not equalled by other makes double its power.

This is proof of Yale-California reliability.

A Card Will Bring Our Catalogue. **We Ship Promptly.**

THE CONSOLIDATED MANUFACTURING CO.
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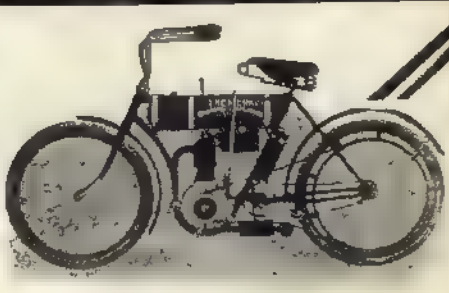
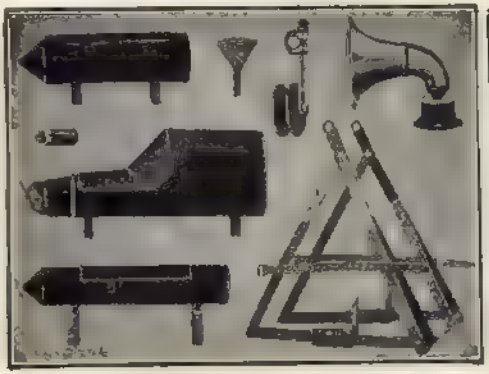
Motor Cycle Specialties

Tool Boxes, Battery Cases, Stands and Luggage Carriers, Idlers, Electric Horns, Lamp Brackets, Cyclemeter Brackets, Pocket Funnels, Etc.

Indian and Yale Motorcycles
PARTS AND REPAIRS.





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F. B. WIDMAYER, 2312 Broadway, N. Y. City.

With all the power to climb hills and pull through sandy roads.

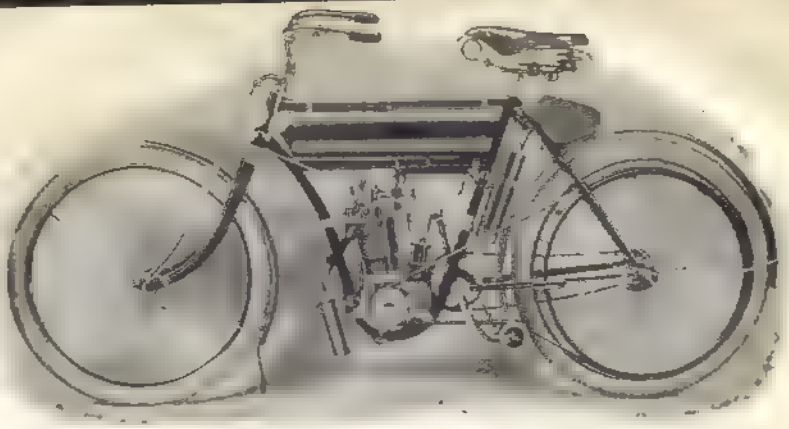
The MERKEL Stands Supreme

Its qualifications comprise of **Speed, Control, Wear, Capacity, Easy Riding, Absolute Reliability,** and **Lowest Price** of **$185.00;** it's **Guaranteed!**

The Merkel 3 horse power machine is able to stand the hardest of use and we can prove it.

Write for our catalogue.

Merkel Motor Co.
1098 26th Ave. Milwaukee, Wis.



1907 MODEL

YALE - CALIFORNIA MOTOR CYCLE

The Consummation of Mechanical Skill and Engineering.
"Comfort and Reliability" is our motto. Let us tell you about it.
A card will bring our catalogue, and WE SHIP PROMPTLY

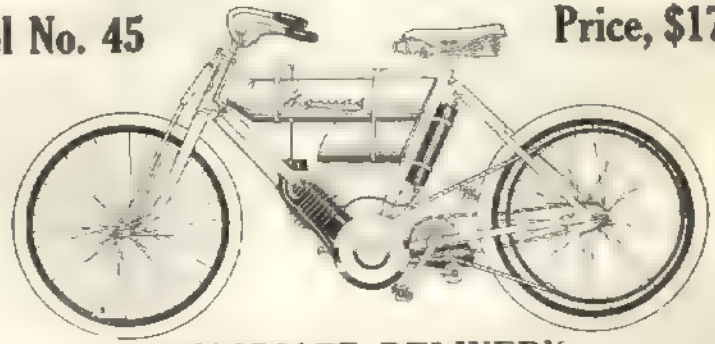
CONSOLIDATED MANUFACTURING COMPANY

Station B, Toledo, Ohio

I. H. WHIPPLE, 260 W. Jackson Boulevard, Chicago, Ill., Agent

NEXT TO FLYING

Model No. 45 **Price, $175.00**



IMMEDIATE DELIVERY

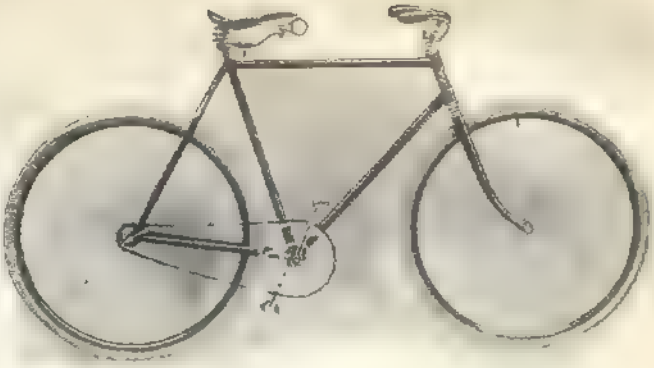
By doubling our factory capacity, we are now able to offer immediate delivery on the Thomas Auto-Bi, Model No. 45.

MR. AGENT. You can't get away from these points:

Our Grip control.
Our Patent Truss Spring Forks.
Our Flexible, unbreakable Wire Connections.
Our Cylinder and Head Cast in One Piece.
Our One-Pieced Forged Engine Crank Shaft.
Our Meter that can be taken apart without removing from frame.
Our Batteries that you can buy anywhere.
Not only have these features been thoroughly tested out by us, but by years of active use BY THE PUBLIC.
Write for catalogue, and terms.

THE THOMAS AUTO-BI CO., 1453 Niagara St., Buffalo, N. Y.

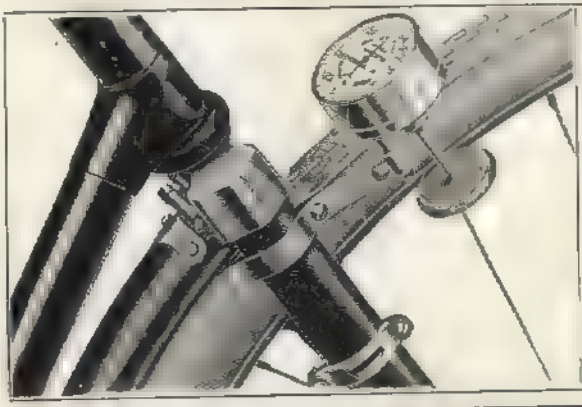
1907 Yale and Snell Bicycles



REPRESENT EXTRAORDINARY VALUE

BICYCLE DEALERS! If you want to handle a line of wheels that will prove easy sellers, secure the agency for the **"Yale"** and **"Snell"**. They have reached a point higher than that ever attained in the construction of a bicycle. It is better to sell the **"Yale"** and **"Snell"** Bicycles than to sell against this line. "A word to the wise is sufficient." Send for catalog and terms.

THE CONSOLIDATED MANUFACTURING CO.
TOLEDO, OHIO



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THAT ARE WORTH WHILE

Simplex Speedometer
Accurate and Reliable, **$5.00**

Simplex Headlight
The very best imported, **$10.00**

Simplex Siren . . $16.00

Waterproof V Belts, Simplex Belt Hooks, Cable Clips, Bowden Wire, Belt Rims, etc.

Sole U. S. Agent for the World Famous Peugeot Motor

Prospect Motor Mfg. Co.
7-9 Park Place, Brooklyn, N. Y.

Hussey Handle Bars

the most complete line for 1907 ever offered. New Shapes. New Features. Write for prices.

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(succeeding Kirk Mfg. Co. & Snell Cycle Fittings Co.)

1907 Yale and Snell Bicycles

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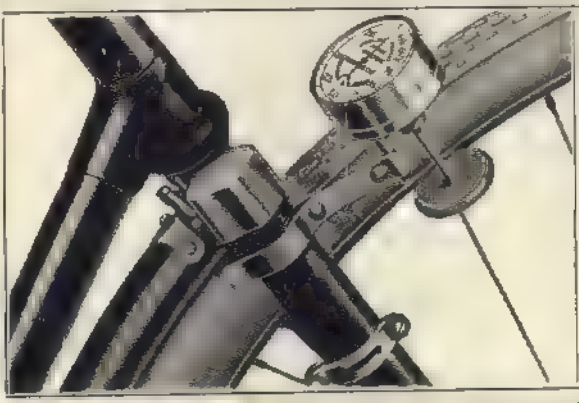

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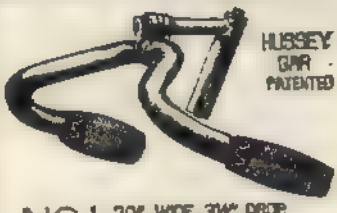

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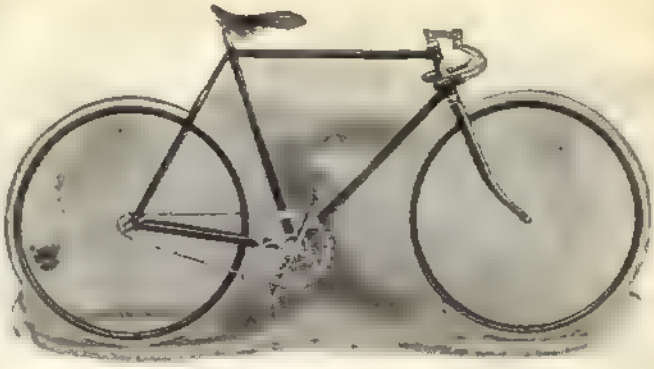
1907 YALE AND SNELL BICYCLES



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The Consolidated Manufacturing Co.

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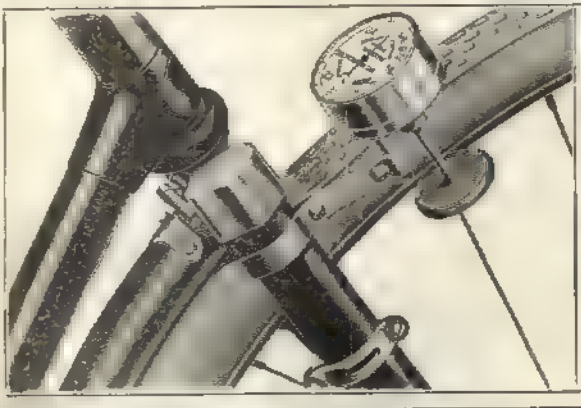

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Specify them on your bicycles regardless of make.

They will help make sales.

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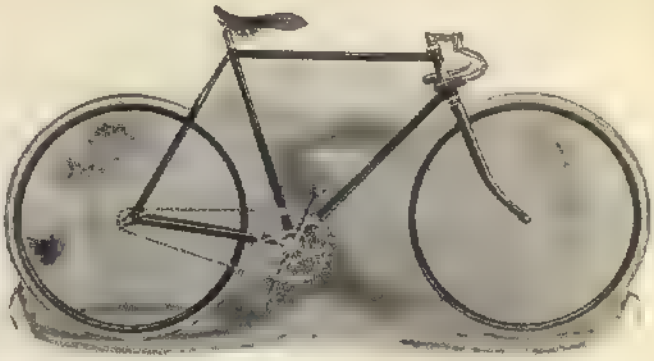

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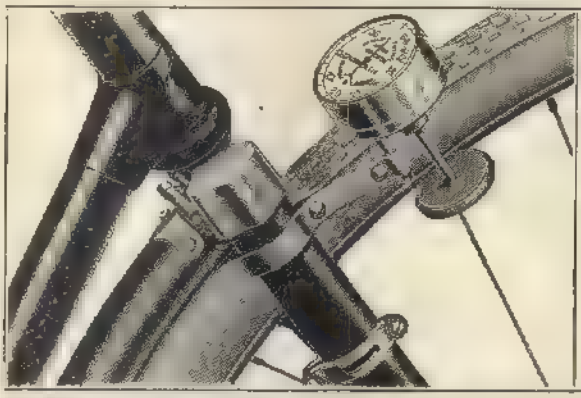

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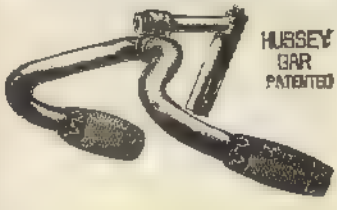

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Specify them on your bicycles regardless of make.

They will help make sales.

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Easily attached to any bicycle or motorcycle. Absorbs all jars, jolts and vibration.

Send for catalogue.

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Rochester, N. Y.

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Bicycle Line Most concerns can supply you with staple articles for a complete Bicycle, but we have added to this line a specialty of Tubings, Lugs, Stems, Stays and other fittings. All makes of Cups and Cones, to help the repair man.

Come to us with your troubles, and we will supply you. See Catalogue 1907.

Auto Line Tires, Tubes, Lamps, Generators, Goggles, Carburetors, Timers, Coils, Switches, Mufflers, Jacks, etc., at **Rock Bottom Prices.**

Write for Catalogue and Discount Sheet.

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Springfield, - - Mass

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CARRY A COMPLETE STOCK OF

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Careful attention paid to Prompt Shipment

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The Most Perfect Mechanically Constructed.

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Our own Spring fork
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Powerful motor
Easy to handle
Does the work
On road and track.

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Who would think of building Bicycles, Coaster Brakes, Lawn Mowers, Sewing Machines and etc., etc., without using The **STAR BALL RETAINERS** therein?

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THE ERIE 2 H. P attachment fits any frame without alteration. Easily attached by anyone. A hill climber. 1000 in use

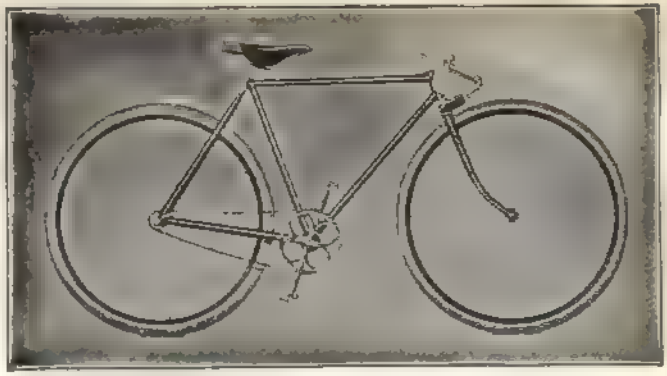
2 & 3 H. P. MOTORCYCLES, MOTORS, CASTINGS, ETC.

SEND STAMP FOR EITHER CATALOGUE

MOTORCYCLISTS Send 15 one-cents stamps for new book "THE MOTORCYCLE." It tells about mechanism, care operation, how to get more power, etc. Name make of motorcycle for low price on accessories for same.

Motorcycle Equipment Co., 4 Lake, Hammondsport, N. Y.

1907 Yale and Snell Bicycles



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THE CONSOLIDATED MANUFACTURING CO.
TOLEDO, OHIO

Columbia Motorcycle Headlight.

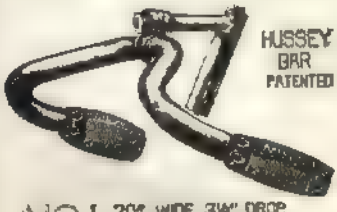
5″ Opening. 4¾″ Reflector. Automobile lamp burner to be used in connection with our Columbia Baby Generator.

Weight, ½ lb. Can be attached to any make of motorcycle.

Columbia Baby Generator.

11″ long. 2″ in diameter. Built on the principle of our Automobile Generator, and provided with a bracket to fit any make of motorcycle.

Hine-Watt Mfg. Co.
58-60 WABASH AVE. . . CHICAGO, ILL.



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Hussey Handle Bars

the most complete line for 1907 ever offered. New Shapes. New Features. Write for prices.

CONSOLIDATED MFG. CO., Toledo, O.

(succeeding Kirk Mfg. Co. & Snell Cycle Fittings Co.)

HALT!

$25.00 Reward

For information about any dealer or repairman using or handling any Compound, Powder, Fluid or Semi-liquid for the purpose of sealing punctures or leaks in pneumatic tires, in violation of our

Neverleak Patents

Write for conditions under which the above reward will be paid

BUFFALO SPECIALTY CO., Buffalo, N. Y.

GEER GREEN EGG MOTORCYCLE

5 H.P. Two-cylinder

Price $225.00

Liberal discount to dealers.

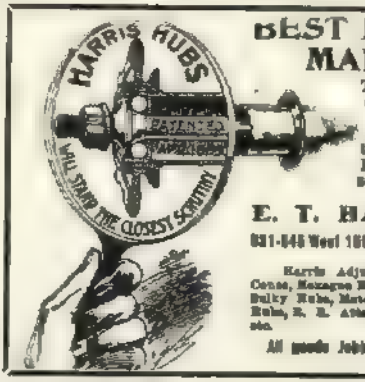
Old machines taken in exchange.

We furnish castings for eight different motors, 1¾ H. P. to 6 H. P., air and water-cooled. Our motor-cycle catalogue is one of the most complete ever issued. Write for copy.

SECONDHAND MOTORCYCLES $40.00 UP.

Write for list No. 125 of seventy machines.

Harry R. Geer Company,
864 McLaran Ave., St. Louis, Mo.



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Thousands of Jobbers Dealers, Manufacturers and Riders say so too.

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831-845 West 18th St., Chicago

Harris Adjustable Repair Cones, Hexagon Nuts and Axles, Bully Hubs, Motor Cycle Front Hubs, S. S. Attachments, etc., etc.

All goods Jobbers handle

BRADLEY MOTOR CYCLES

Single and Double Cylinder, $200 and $275

C. E. Bradley Motor Co.
268 Diamond St., Philadelphia, Pa.

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SUBSCRIPTION
AGENTS

Special Symbol Canes

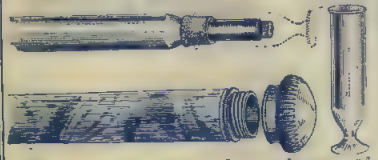
No. 709. Cane, heavy maple stick, piano finish, in purple, maroon, etc., assorted with large white metal head, sewed baseball design with a figure of Teddy Bear on two sides, raised effect, a fitting emblem for the Cubs Baseball Club, nickel ferrule.
Per dozen 1.15

No. 710. Cane, heavy maple stick, piano finish, in purple, maroon etc., asorted with large size white metal head with figure of a man's sock on two sides in raised effect. This is a fitting emblem for the White Sox Baseball Club; nickel ferrule.
Per dozen 1.15

No. 712. Cane, heavy maple stick, piano finish, in maroon, purple, etc. assorted, 1¼ in., white metal head made in the shape of a poker dice set on one corner. This is something entirely new and will be a popular cane with the "dandies"; nickel ferrule.
Per dozen 1.15

No. 711. Cane, heavy maple stick, piano finish, in purple, maroon, etc., assorted, 1¼ in., white metal head made in exact shape of rugby football; a very fine emblematic cane for any rugby football team; nickel ferrule.
Per dozen 1.15

NOVELTY WHISKY CANE.



No. 199. Novelty Whisky Cane, mahogany and rosewood finish, fine heavy stick, top is hollowed out and holds a long blown glass tube retainer, which can be filled with whisky or any other liquid. This tube is corked, and has a cork band around neck over which fits a little drinking glass or jigger made of a similar glass tube. Holds a goodly quantity. Metal head, which screws on, hides and effaces any suspicion of the contents. It can be highly recommended as a seller. Both useful and as a novelty. The combination of both makes it a very popular article. Per dozen 3.50

WOODEN CANE RINGS.

Made of highly seasoned, kiln dried, crack proof hardwood.

Natural Whitewood Finish.	Per 100
No. 4. 1⅝ in. inside.....	.40
No. 3. 1¾ in. inside.....	.50
Varnished Oil Finish.	Per 100
No. 2. 1¾ in. inside.....	.50
No. 1. 1⅞ in. inside.....	.50

WOODEN KNIFE RINGS.

Same quality as above.

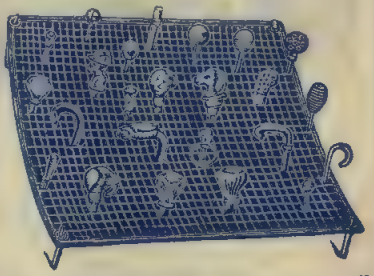
	Per 100
No. 5. 1¼ in. white	.40
No. 6. 1¼ in. mahogany	.50

All rings are packed 50 in package.

Net Cane Racks

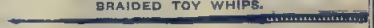
Made of Strong Twisted Fish Cord.

Bound with strong canvas all around, with finished loops in each corner, with brass eyelets.

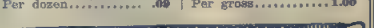


No. 110.	Size 4x5 square feet.	Each	.40
No. 111.	Size 5x6 square feet.	Each.....	.55
No. 112.	Size 6x6 square feet.	Each.....	.75
No. 113.	Size 6x8 square feet.	Each.....	.90
No. 114.	Size 7x7 square feet.	Each.....	1.00

BRAIDED TOY WHIPS.

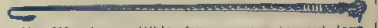


No. 200. Balloon Whip, colored Java stock, with snap, handles assorted paterns, colored paper covered, 28 inches long.
Per dozen..... .09 | Per gross..... 1.00



No. 201. Toy Whip, braided in fancy variegated colors, continuous loop end, knotted snap, 30 inches long.
Per dozen..... .18 | Per gross..... 2.10

No. 202. Fancy Braided, in colors, short snap, ebony wood whistle end, 29½ inches long.
Per dozen..... .20 Per gross... 2.25

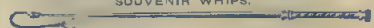


No. 203. Jockey Whip, fancy colored braided Java stock, 29 in. long short snap metal jockey head end.
Per dozen ..... .27 Per gross 3.00

UNCLE SAM WHIPS.

No. 1926. Uncle Sam Toy Whip, droop lash, 30 to 36 in. long, enameled red whistle end. Shaped stick covered with glazed flag, red white and blue paper. Long braided droop lash, snap end.
Per dozen..... .55 Per gross..... 6.00

SOUVENIR WHIPS.



No. 1718. Souvenir Whip, 40 inches long, flexible braided Java stock, imitation celluloid butt and band, 8½ in. handle wound spirally with colored celluloid, in black, green and red winding in contrasting color, labeled "Souvenir"; braided snap top.
Per dozen..... .65 | Per gross..... 7.50

No. 1719. Souvenir Whip, 40 in. long, flexible braided Java stock, inserted red black and green, braided stock, top labeled "Souvenir" imitation celluloid butt and band 8½ in handle spirally wound with colored celluloid braided cord wrist band brass button. Butt cord a fine light whip.
Per dozen ..... .75 Per gross 7.75

The Dueber Watch Case Co.'s Gold Filled Watch Cases

Prices quoted are List subject to dealers' Discount

THE "DUEBER SPECIAL" WATCH CASE

Fine 14 Kt. Gold Filled. Guaranteed for 25 Years.

The "Dueber" cases are well known for their wearing quality and we dare say at the price there is no case in the market better than the Dueber. This manufacturer has the reputation for giving the best values obtainable. The cases are in plain polished, or engine turn or fine engraved designs, assorted, all beautiful and up to date.

The following prices are list subject to dealers' discount.

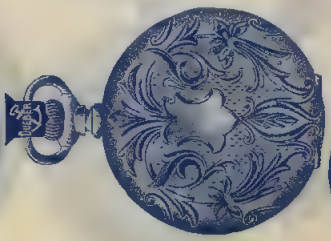
No. 6065. 18s Htg., plain or engraved, each list 9.50
No. 6066. 16s Htg., plain or engraved, each list 9.00
No. 6067. 12s Htg., plain or engraved, each list 7.50
No. 6068. 6s Htg., plain or engraved, each list 6.50
No. 6068½. 0 size, list 5.50

OPEN FACE CASES

S. B. & B.

No. 6069. 18s, plain or engraved, each list..... 6.75
No. 6070. 16s, plain or engraved, each list..... 6.75
No. 6071. 12s, plain or engraved, each list..... 6.25
No. 6072. 18s, O. F. swing ring, each list..... 8.50
No. 6073. 18s, O. F., S. B & H. emblematic, each list 7.50

Note.—Ornamented cases extra $3.00 to $5.00 each. This means raised ornaments in solid gold, which are very elaborate and artistic.



Crescent Watch Case Co.'s
High-Grade Gold Filled Watch Cases

Prices quoted are List subject to Dealers' Discount

CRESCENT EXTRA FINE WATCH CASES

14 kt. gold filled, warranted for 25 years.

These are genuine jointed front and back cases, made in plain polish or engine turned, or engraved The designs are very beautiful and engravings assorted in very large variety of up to date patterns The Crescent case has a reputation second to none for wearing quality. It has been long enough in the market to prove its merits No case in the market is made with greater care The finish is unsurpassed and the goods essay truly the full amount of fine gold necessary to warrant a full 25 year wear.

Prices Quoted are List, Subject to Dealers' Discount.

No.		Each, List
6125	18s Hunting, plain or engraved	11.00
6126	16s Hunting, plain or engraved	10.50
6127	12s Hunting, plain or engraved	8.75
6128	6s Hunting, plain or engraved	7.75
6129	0s Hunting, plain or engraved	7.25

Open Face

No.		Hinge	Screw
6130	18s Plain or engraved	10.00	9.00
6131	16s Plain or engraved	9.75	8.75
6132	12s Plain or engraved	8.25	8.00

Note—Any of the above cases in plain polished $1.00 less list.

CRESCENT "PLANET" 20 YEAR CASES

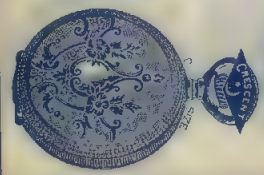
10 Kt. Gold Filled.

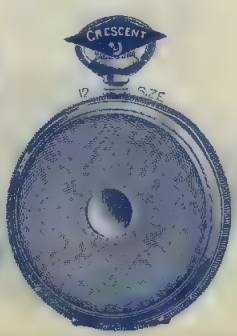
Made in plain polished, or engine turned, or fine hand engraved designs, large variety. As to grade of goods, this is one of the best 20 year makes known to the trade.

Prices Quoted are List, Subject to Dealers' Discount.

No.		Hunting	O.F. Screw
6133	18s Plain or engraved	8 25	7 25
6134	16s Plain or engraved	8.00	7.00
6135	12s Plain or engraved	7.50	6.75
6136	6s Plain or engraved	6.50	
6137	0s Plain or engraved	6.00	

Note—"Plain" polished Planet cases in all sizes, 50 cts less than list price.





"OUR VERY BEST" FURNITURE POLISH.

Removes the Dirt Gives Life to Varnish. Brings Back the Polish

3 oz. Bottles, [illegible] per doz. $1
6 oz. Bottles, [illegible]
1 gal. Cans, [illegible]

[illegible] recommending this polish we [illegible] with the [illegible] knowledge and gradients [illegible] obtains no [illegible] dirt [illegible] and [illegible] preparations or polish [illegible] and drying [illegible] the furniture. This [illegible] [illegible] [illegible]

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Fine Quality Quadruple Silver Plated Atomizers, Flasks, Steins, Etc. Guaranteed.

ATOMIZER
Cut glass bottle, burnished trimmings, height 7 ½ inches
No. W-3404 Each $8 00

ATOMIZER
Butterfly high silver effect 6 ½ inches
No. W-60 Each $7 50

ATOMIZER
Cut glass, burnished trimmings, height 6½ inches.
No. W 15944 Each $5 55

ATOMIZER
Cut glass burnished trimmings, height 5¼ inches
No. W 4301 Each $5 15

CARD TRAY.
Satin center, burnished sides, length 6¼ inches.
No. B-235 Each $5 20

FLASK.
Cut glass, burnished, gold lined, has cup on bottom, capacity 1½ gills, length 4¾ inches.
No. W-15973 Each $5 15

FLASK.
Plain satin finish, capacity ½ pint, length 4 inches.
No. W-107 Each $3 00

MUG.
Copper body, silver trimmings, glass bottom, height 7¼ inches, capacity 4 half pints.
No. W-08 Each $14 70

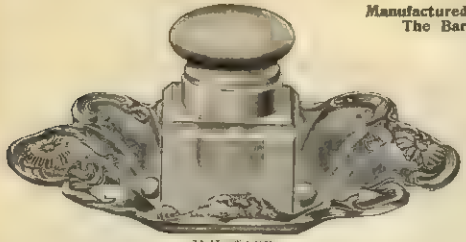
STEIN.
Decorated porcelain, assorted colors, height 6 inches, capacity 2 ½ pints.
No. W-5 Each $5 90

FLASK.
French gray finish, very heavy applied trimmings, capacity ½ pint, length 5½ in
No. W 116 Each $6 00

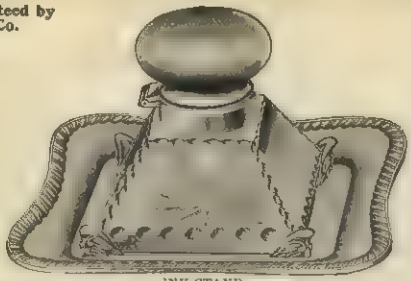
The above prices are subject to the regular discount.

Extra Fine Quality Quadruple Silver Plated Ink Stands and Writing Sets.

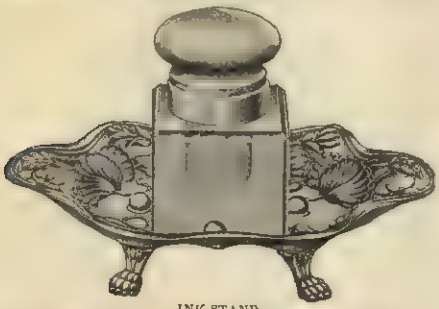
Manufactured and Guaranteed by The Barbour Silver Co.



INK STAND.
No. B-2288 French gray finish, cut glass bottle, length 5¼ inches. Each $6 40

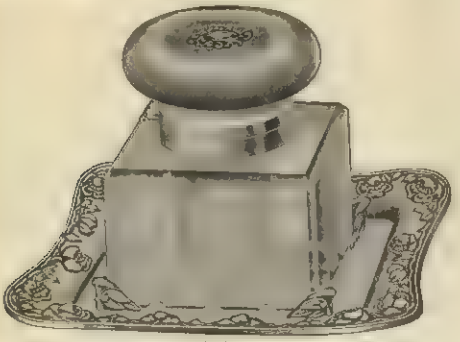


INK STAND.
No. B-2284 Plain polished, cut glass bottle, length 5¼ inches. Each $6 40

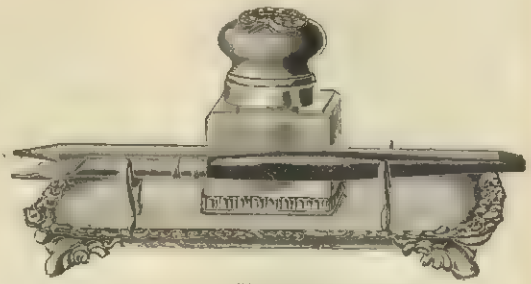


INK STAND.
No. B-2286 French gray finish, cut glass bottle, length 5½ inches. Each $5 50

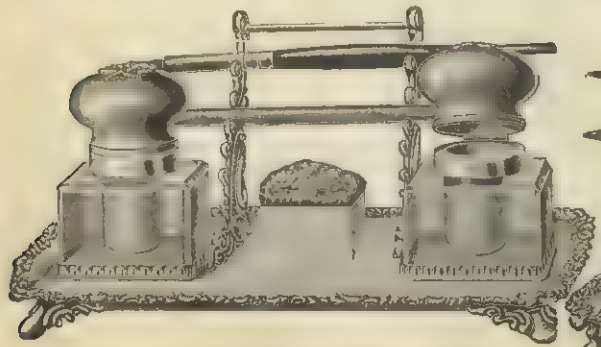
INK STAND.
No. B-2290 French gray finish, cut glass bottle, length 7 inches. Each $8 40



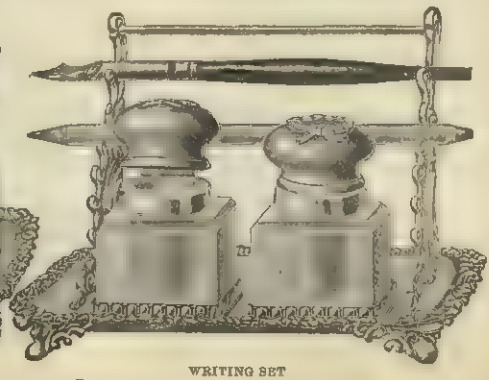
INK STAND.
No. B-2285 French gray finish, cut glass bottle, length 6 inches. Each $8 40



WRITING SET
No. B-2282 Burnished stand, cut glass bottle, length 6½ inches. Per set $7 20



WRITING SET.
No. B-2280 Burnished stand, cut glass bottles, length 9½ inches. Per set $16 00



WRITING SET
No. B-2281 Burnished stand, cut glass bottles, length 8½ inches. Per set $10 40

The above prices are subject to the regular discount.

SHURE'S THE WINNER PRICE LIST

Base Balls -- Foot Balls -- Base Ball Bats

EXCELLENT VALUES AT THE PRICE—FULL REGULATION STYLES

4

5

No. 4. Two piece, white sheepskin cover. Size, 8 in. Good value. One dozen in a box. Blue sewed. Gross..... 4.00 Doz. ..... .35

No. 5. Winner. Very good value for a five-cent drive; substantially made. 2-piece white sheepskin cover, full 8 inch size, double blue thread sewed. Gross ..... 4.25 Doz. ..... .37

No. 6. Hi-Ski. Two piece, white sheepskin cover. Size 8¼ inches. Well made and carefully sewed. In size and workmanship it is the best 5c. ball on the market. One dozen in a box. Blue sewed. Gross ..... 4.75 Doz. ..... .40

10

15

No. 10. The Eureka. Regulation white sheepskin cover, well sewed, size 8¾ inches, the largest ball made at the price, very popular; packed 1 dozen in a box. A big 10c. value. Dozen ..... .75

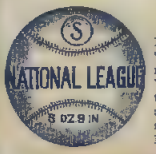
No. 15. Junior League. A well-made and durable ball, horsehide cover, double hand stitched, red thread, 1 in a box, size 9¼ inches. A popular seller. Dozen 1.20

20

25

No. 20. Boys' League Baseball is the only 25c seller on the market made with a solid rubber center, and entirely wound with twine by hand, horse hide cover, fancy stitched, 8¼ inches, each ball in separate box. Dozen 1.95

No. 25. King of the Diamond. Regulation size and weight, horsehide cover, sewed with blue thread, double stitched, each one in a box, 9 inches. Dozen 2.00



No. 50. National League. Rubber center. Regulation size. The sale of this popular 50c ball more than doubles each year. Yarn wrapped, horsehide cover, top stitched. Combination red and blue thread. Each ball in separate box. 9 inches Dozen 4.00

6

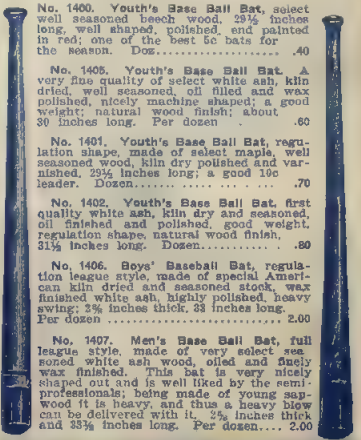
100

No. 100. Official League. Double horsehide cover of the very best quality; with rubber center; very finely sewed, red thread, 5 oz., ball wrapped in tissue and tin foil, and guaranteed for a full game 9 inches. Dozen 8.50

ROUND RUBBER FOOT BALLS.

No. 1. With brass keys, 6 inches in diameter. Doz. . 3.25
No. 2. With brass keys, 7 inches in diameter. Doz... 4.00
No 3. With brass keys, 8 inches in diameter. Doz... 4.75
No. 4. With brass keys, 9 inches in diameter. Doz .. 5.50
No. 5. With brass keys, 10 inches in diameter Doz... 6.25
No 6. With brass keys, 11 inches in diameter Doz... 7.00
Extra keys for Foot Balls. Dozen..... .35

BASE BALL BATS.



No. 1400. Youth's Base Ball Bat, select well seasoned beech wood, 29½ inches long, well shaped, polished, and painted in red; one of the best 5c. bats for the season. Doz..... .40

No. 1405. Youth's Base Ball Bat. A very fine quality of select white ash, kiln dried, well seasoned, oil filled and wax polished, nicely machine shaped; a good weight; natural wood finish; about 30 inches long. Per dozen . .60

No. 1401. Youth's Base Ball Bat, regulation shape, made of select maple, well seasoned wood, kiln dry polished and varnished, 29½ inches long; a good 10c leader. Dozen..... .70

No. 1402. Youth's Base Ball Bat, first quality white ash, kiln dry and seasoned, oil finished and polished, good weight, regulation shape, natural wood finish, 31½ inches long. Dozen..... .80

No. 1406. Boys' Baseball Bat, regulation league style, made of special American kiln dried and seasoned stock, wax finished white ash, highly polished, heavy swing; 2⅝ inches thick, 33 inches long. Per dozen 2.00

No. 1407. Men's Base Ball Bat, full league style, made of very select seasoned white ash wood, oiled and finely wax finished. This bat is very nicely shaped out and is well fixed by the semi-professionals; being made of young sap-wood it is heavy, and thus a heavy blow can be delivered with it. 2⅝ inches thick and 33½ inches long. Per dozen.... 2.00

ELECTRIC BELLS AND SUPPLIES.

ELECTRIC BELL OUTFITS.

No. 25 [illegible] $2.00

No. [illegible] 75

No. [illegible] 2.50

ELECTRIC BELLS.

Iron Box

No. 525 [illegible] each $ [illegible]

No. 540 [illegible] each

No. 540 [illegible] each

Wood Box

No. 4[illegible] each $ [illegible]

No. [illegible] each

No. 44 [illegible] each

BUZZERS.

No. [illegible] $ [illegible]

No. [illegible] 60

WOOD BASE SWITCHES.

No. 461 [illegible] each $ [illegible]

No. 462 [illegible] 40

No. 463 [illegible] 50

No. 464 [illegible] 70

No. 465 [illegible] 40

No. 466 [illegible] 45

ELECTRICAL SUPPLIES.

PUSH BUTTONS.

Wood

Diameter 2½ in.

No. 441—Natural oak, per dozen $0.70
No. 442—Antique oak, .70
No. 443—Walnut, .80
No. 444—Ash, .80
No. 445—Cherry, 1.00

PLAIN REAR PUSHES.

Height 3 in.

No. 43—Oak, per dozen $6.00
No. 46—Walnut, 6.00

PRESSED METAL.

Nos. 9595 and 9598. Diameter 2½ in.

No. 9595—Light bronze, per dozen $2.40
No. 9598—Dark bronze copper, 2.40
No. 9600—Light [illegible], 2.40
No. 9603—Dark [illegible] copper, 2.40

[illegible] Engraved [illegible] Nos. [illegible]

DRY BATTERIES.

No. [illegible] [illegible] [illegible]

No. 100—Meson, 2½ by 6½ in., very efficient has long life and excellent recuperative powers, weight per dozen 2 lbs., [illegible]

No. 300—Ajax, 1½ volts 12 to 15 amperes [illegible] telephone service call bell, burglar alarm, etc., weight per dozen 12 lbs., [illegible]

No. 700—Revonoc, 1½ volts, 18 to 23 amperes, for use on gas engines, automobiles and wherever intermittent service of the highest efficiency is needed. weight per dozen 5 lbs., [illegible]

WIRE.

Insulated Annunciator Wire

No. 518—18 B. & S. gauge, in coils of 1 lb., per lb. $0.60
No. 515½—18 B. & S. gauge, in coils of ½ lb., per lb. .60
No. 018—18 B. & S. gauge in spools about 6 lbs., per lb. .50

BATTERIES.

Carbon Cylinder.

No. 700 [illegible] each $1.50
No. 702 [illegible] .75
No. 703 [illegible] .75
No. 704 [illegible] .60
No. 705 [illegible] .60

[illegible] packed upon circuit battery on the market [illegible] for all [illegible]

Le Clanche.

No. 900 [illegible] each $ .90
No. 906 [illegible] .12
No. 903 [illegible] .06
No. 1004 [illegible] .06
No. 1005 Sal ammoniac, .10

The Le Clanche Battery is the oldest, standard type of open circuit battery, and still holds its own as a good standard all around work. Our porous cups are the very best that can be made, insuring a powerful and lasting battery.

BATTERY ZINCS.

Copper Thumb Screw.

No. 55—Round plain, per dozen $ .10
No. 65—Square plain, .10

WEIGHT PER DOZEN [illegible] lb.

SAL AMMONIAC.

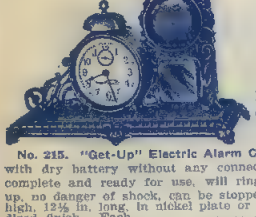
Imported, 99 per cent pure.

No. 910—In bulk, per lb. $0.20
In papers, weight per dozen 3 lbs., per dozen .80

POCKET AMMETERS.

[illegible] [illegible] [illegible] [

Electric Alarm Clocks - PLAIN AND COMBINATION



The Only Perfect Electric ALARM CLOCKS on the Market

No. 315 is a combination Flash Light and Bank Alarm Clock. A Big Seller.

No. 215. "Get-Up" Electric Alarm Clock is operated with dry battery without any connections to make complete and ready for use, will ring until you get up, no danger of shock, can be stopped at will; 8 in high, 12½ in. long, in nickel plate or copper, oxidized finish. Each 2.50

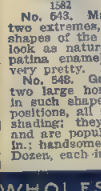
No. 315. Flash Light Alarm Clock. This is same as our No. 215, but is fitted with a long insulated wire cord with bulb end, by touching it light illuminates the face of clock can be read any time by sleeper from bed, also has a bank with lock and key; an entirely new item for which big demand is being created, every one guaranteed. Each 3.90

Beautiful Statuette Clocks — RICH ANTIQUE FINISH.

No. 1330. Clocks. In this assortment are represented six different figures each a statuette of a different type, very artistic, the base is an ornamental design, footed, and holds the clock movement, average height about 12-in., base, 3x7-in., from an artistic standpoint this assortment has no equal in the market at a similar price, from a comparative view of the value and the figure we quote this should enable the dealer to sell a large number of these beautiful clocks; they are handsomely made, patina finish imitation antique bronze; packed six in box, one of each style. Per assortment of 6..... 10.50

Antique Clock or Mantle Figures. Patina Finish

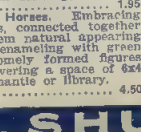
These are Fine Imported Bronzes Closely Imitating the Antique Relics so Highly Prized



1582

No. 1582. Holland Tower and Windmill. This is a nice bronze cast ornamental figure for a mantel or clock, 9-in. high, 3½-in. base, represents the regulation tower with large forearm windmill, thermometer in front; very handsome figure, patina finish. Each..... .50

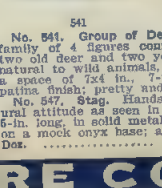
543



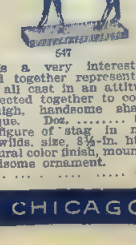
548

No. 543. Mare and Colt figure represents the two extremes, the old and the young, good graceful shapes of the animals, the two figures connected and look as natural as life, size, 5½x2½ in., 6-in. high, patina enamel finish with green shading; certainly very pretty. Dozen 1.95

No. 548. Group Figures of Horses. Embracing two large horses and two colts, connected together in such shape that it gives them natural appearing positions, all finished in brown enameling with green shading; they are very handsomely formed figures and are popular everywhere, covering a space of 6x4 in.; handsome ornament for a mantle or library. Dozen, each in Box 4.50



541



547

No. 541. Group of Deer, is a very interesting family of 4 figures connected together representing two old deer and two young, all cast in an attitude natural to wild animals, connected together to cover a space of 7x4 in., 7-in. high, handsome shape, patina finish; pretty and unique. Doz. 5.50

No. 547, Stag. Handsome figure of stag in natural attitude as seen in the wilds, size, 8½-in. high, 6-in. long, in solid metal, natural color finish, mounted on a mock onyx base; a handsome ornament. Doz. 4.50

HANDSOME ENAMELED IRON MANTEL CLOCKS

Appreciable Values in High Grade Guaranteed Goods

Popular Styles and Sellers

Una. Aragon.

"Una" Clock. (Waterbury.) **Iron Enameled** in fine jet black high gloss finish. Gilt trimmings. In fancy design 8-day strike gong. ½ hour on cup-bell. 16 in. high. 8 in. wide. 4½ in. American dial with Roman figures. The biggest value offered anywhere at the price. Each $3.45

Aragon Clock. (New Haven). Enameled in black or malachite. 11 in. high 10 in. wide. Dial 8 in. High gloss finish. With gilt bronze trimmings in front. High feet. 8 day ½ day hour strike. Cathedral gong. Each 4.80

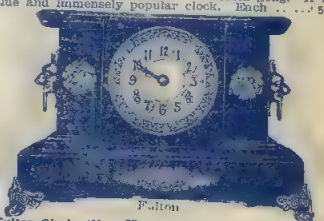
Belva. Corydon.

Belva Clock (Waterbury Clock Co.) **enameled iron** with gilt ornaments, 8-day strike, gong, ½ hour on cup bell, 4½ in. dial 11 in. high, 8½ in. wide, American white dial. Roman figures. Rococo sash or, with ivory colored dial. Arabic figures. Each .. $4.50

Corydon. (New Haven.) **Iron** enameled in high glass polish, black or malachite color. Gilt or bronze trimmings. 6 in. wide, white or ivorine dial. 15 in. high, 9 in. wide, 8 day half hour strike, cathedral gong. Beautifully designed with very handsome trimmings that greatly enhance the beauty of the clock. Each 5.25

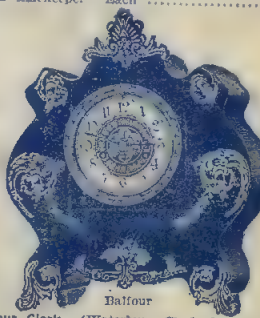
Milton.

Milton Clock. (New Haven). **Iron enameled, black** or malachite color. Gloss polish. Bronze trimmings. Extra fancy design. One that will please when nothing else will. 11 in. high 11½ in. wide. 6 in. ivorine dial. 8 day half hour strike Cathedral gong. A big value and immensely popular clock. Each 5.25



Fulton

Fulton Clock. (New Haven.) **Iron enameled** in black or malachite. High gloss finish. Bronze feet and trimmings. Two side pendants. 10½ in. high. 15½ in. wide, 6 in. white or ivorine dial, fancy, 8-day one-half hour strike Cathedral gong. A very fine guaranteed timekeeper. Each 5.00



Balfour

Balfour Clock. (Waterbury Clock Co.), **Enameled iron,** fancy gilt ornaments, fancy shape, 4½ in. dial, 13½ in. high, 10⅝ in. wide, 8- day strike, gong, ½ hour on cup bell, American white dial, Rococo sash or, with ivory colored dial, Arabic figures, a very neat, guaranteed clock. Each 5.25

GENTLEMEN'S 18 SIZE WATCH WORKS OR MOVEMENTS

Stem winding and stem setting. We fit all cases to movements and regulate watches (no charge) before shipping.

Prices quoted on this page are for the Works or Movements only. For cases to fit any of the Movements shown on this page, see pages 3 to 20, inclusive (or Nos. 8300 to 8561, inclusive). Add the price of the Case wanted to that of the Movement desired, which will give you the price of the Complete Watch. When ordering Watches simply quote the number of Movement and Case wanted.

Movements shown on this page are all high grade Railroad watches and will pass Railway Inspection.

Bunn Special, Springfield, Illinois, Movement.

Nickel, 21 extra fine high colored ruby jewels, gold settings, accurately adjusted to temperature, six positions and isochronism, very carefully timed, highly finished beveled steel escape wheel, chamfered teeth, compensation balance, gold screws, including four timing screws, entire escapement cap-jeweled, hand finished conical pivots, best quality Swiss Breguet hairspring, Philippe coil; all steel parts highly polished, patent micrometric screw regulator, best quality Swiss mainspring, double sunk glass enameled dial, artistically damaskeened in two styles, bright rayed and gold inlaid pattern, black enameled lettering. A strictly high-grade watch for very exacting railway service.

No. 9385 Hunting style.....$59 00
No. 9386 Open Face style..... 59 00

Dueber-Hampden Special Railway, 21 Jewels, Nickel, Adjusted Movement.

Nickel, 21 fine ruby and sapphire jewels in 10 gold settings, jeweled center, escapement cap-jeweled, conical pivots, bevel head gilt screws, micrometer regulator, gold screws, compensation balance, accurately adjusted to temperature, isochronism and position, double sunk glass enamel dial with red marginal figures, Breguet hairspring, new model stud, meantime screws, steel work highly polished, patent center pinion, elegantly engraved and damaskeened, fine escapement, fleur-de-lis hands and first quality "Hampden" mainspring.

No. 9387 Hunting style $50 00
No. 9388 Open Face style . 50 00

Dueber-Hampden Special Railway, 23 Jewels, Nickel, Adjusted Movement.

Nickel, 23 extra fine ruby and sapphire jewels in solid gold settings, barrel arbor and center staff jeweled with the finest of sapphires, escapement cap-jeweled, conical pivots, finely graduated micrometer regulator, compensation balance, gold screws, Breguet hairspring, new model stud, accurately adjusted to temperature, isochronism and position, patent center pinion, bevel head gilt screws, highly polished steel work, fine double sunk glass enamel dial, best fleur-de-lis hands, elegantly engraved and damaskeened in two colors, gold lettering.

The handsomest, most finely finished and closely timed movement made in America.

No. 9389 Hunting style.....$70 00
No. 9390 Open Face style..... 70 00

Waltham Vanguard Movement

21 diamond and ruby jewels, both balance pivots running on diamonds (raised gold settings), jewel pin set without shellac, double roller escapement, steel escape wheel, exposed pallets, compensating balance in recess, adjusted to temperature, isochronism and five positions, patent Breguet hairspring hardened and tempered in form, embossed gold patent micrometric regulator, tempered steel safety barrel, exposed winding wheels, elaborately finished nickel plates with gold lettering, plate and jewel screws gilded, steel parts chamfered, double sunk dial. The Vanguard is the finest 18 size movement in the world.

No. 9391 Hunting style $45 10
No. 9392 Open Face style ... 45 10

Waltham Crescent Street Movement.

21 ruby jewels, gold settings, jewel pin set without shellac, double roller escapement, steel escape wheel, exposed pallets, patent micrometric regulator, compensation balance in recess, adjusted to temperature, isochronism and five positions, tempered steel safety barrel, exposed winding wheels, patent Breguet hairspring hardened and tempered in form, doublesunk dial.

No. 9393 Hunting style.....$72 75
No. 9394 Open Face style ... 72 75

Waltham Vanguard Movement.

Nickel, 19 diamond, fine ruby and sapphire jewels, both balance pivots running on diamonds, raised gold settings, jeweled main wheel bearings, jewel pin set without shellac, double roller escapement, steel escape wheel, exposed pallets, compensation balance in recess, adjusted to temperature, isochronism and five positions, patent Breguet hairspring hardened and tempered in form, embossed gold patent micrometric regulator, tempered steel safety barrel, exposed winding wheels, elaborately finished nickel plates with gold lettering, steel parts chamfered, double sunk dial. The Vanguard is the finest 18 size movement in the world.

No. 9395 Hunting style.....$79 10
No. 9396 Open Face style 79 10

Dueber-Hampden New Railway, 23 Jewels, Nickel, Adjusted Movement.

Nickel, 23 fine ruby and sapphire jewels in gold settings, barrel arbor and center staff jeweled with fine sapphires, escapement cap-jeweled, conical pivots, patent micrometric regulator, compensation balance, gold screws, Breguet hairspring, meantime screws, new model stud, adjusted to temperature, isochronism and position, patent center pinion, polished steel work, double sunk glass enamel dial, fleur-de-lis hands, finely damaskeened and finished throughout, gold lettering.

No. 9397 Open Face style only. $56 00

Waltham Vanguard Movement.

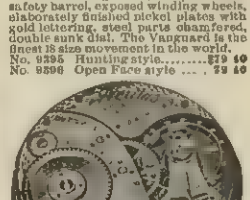
Nickel, 23 diamond and ruby jewels both balance pivots running on diamonds (raised gold settings), jewel pin set without shellac, double roller escapement, steel escape wheel, exposed pallets, compensation balance in recess adjusted to temperature, isochronism and five positions, patent Breguet hairspring hardened and tempered in form, embossed gold patent micrometric regulator, tempered steel safety barrel, exposed winding wheels, elaborately finished nickel plates with gold lettering, plate and jewel screws gilded, steel parts chamfered, double sunk dial. The Vanguard is the finest 18 size movement in the world.

No. 9398 Hunting style $99 80
No. 9399 Open Face style 99 80

Bunn Special, Springfield, Illinois, Movement.

Nickel, 24 extra fine high colored ruby jewels, gold settings, accurately adjusted to temperature, six positions and isochronism, very carefully timed, highly finished beveled steel escape wheel, chamfered teeth, compensation balance, gold screws, including four timing screws, entire escapement and third wheel cap-jeweled, hand finished conical pivots, best quality Swiss Breguet hairspring, Philippe coil, all steel parts highly polished, patent micrometric screw regulator, best quality Swiss mainspring, double sunk glass enameled dial, artistically damaskeened in new style bright rayed pattern, black enamel lettering. A strictly high-grade watch for most exacting railway service.

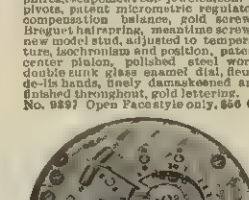
No. 9400 Hunting style. $60 00
No. 9401 Open Face style.... 60 00



Elgin Veritas Movement.

¾ plate, nickel, 21 fine ruby jewels (raised gold settings), adjusted to temperature, isochronism and positions, quick train with gold wheels, straight line escapement with steel escape wheel, pallet arbor and escape pinion, cone pivoted and cap-jeweled, exposed pallets, compensating balance, Breguet hairspring, micrometric regulator, patent safety barrel with spring box rigidly mounted on bridge, display winding work, patent recoiling click, patent self-locking setting device, double sunk glass enameled dial, dust ring, damaskeened plates, carefully timed and finely finished throughout.

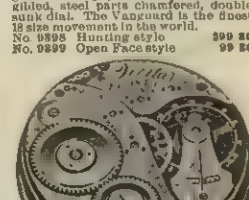
No. 9402 Hunting style $55 10
No. 9403 Open Face style . 55 10



Elgin Father Time Movement.

Full plate nickel, 21 fine ruby jewels, gilded settings, adjusted to temperature, isochronism and positions, quick train, straight line escapement with steel escape wheel, pallet arbor and escape pinion, cone-pivoted and cap-jeweled, exposed pallets, compensating balance, Breguet hairspring, micrometric regulator, patent recoiling click, double sunk dial, dust ring, damaskeened plates, carefully timed and finely finished throughout.

No. 9404 Hunting style.....$78 75
No. 9405 Open Face style 78 75



Elgin Veritas Movement.

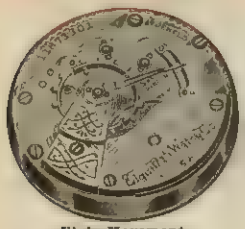
¾ plate, nickel, 23 extra fine ruby jewels (raised gold settings), adjusted to temperature, isochronism and positions, quick train and gold wheels, straight line double roller escapement with steel escape wheel, poised pallet and fork, pallet arbor and escape pinion, cone-pivoted and cap-jeweled, exposed pallets, compensating balance, Breguet hairspring, micrometric regulator, patent safety barrel with spring box rigidly mounted on bridge, barrel arbor pivots running on jewels, display winding work patent recoiling click, patent self-locking setting device, double sunk glass enamel dial, dust ring, plates beautifully damaskeened, carefully timed and finely finished throughout.

No. 9406 Open Face style only. $88 80

Gentlemen's 18 Size Watch Works or Movements.

Stem winding and stem setting. We fit all cases to movements and regulate watches (no charge) before shipping.

Prices quoted on this page are for the Works or Movements only. For Cases to fit any of the Movements shown on this page, see pages 3 to 20, inclusive or Nos. 8300 to 8561, inclusive). Add the price of the Case wanted to that of the Movement desired, which will give you the price of the Complete Watch. When ordering Watches simply quote the number of Movement and Case wanted.



Elgin Movement.

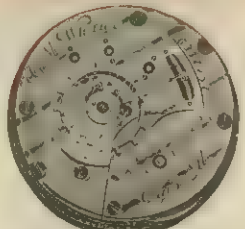
Nickel, 17 jewels (settings), exposed pallets, cut expansion balance, Breguet hairspring, micrometric regulator, sunk second dial, dust ring, damaskeened plates.

No. 9363 Hunting style.... $17 85
No. 9364 Open Face style . 17 85

Waltham Movement.

Nickel, 17 jewels, settings, exposed pallets, compensation balance, adjusted patent micrometric regulator, patent Breguet hairspring hardened and tempered in form.

No. 9365 Hunting style $22 80
No. 9366 Open Face style 22 80



Elgin, G. M. Wheeler Movement.

Nickel, 17 jewels (gilded settings), adjusted to temperature, quick train, straight line escapement, exposed pallets, compensation balance, Breguet hairspring, micrometric regulator, sunk second dial, dust ring, damaskeened plates.

No. 9367 Hunting style $22 80
No. 9368 Open Face style .. 22 80

Waltham, P. S. Bartlett Nickel Movement.

17 jewels, settings, exposed pallets, compensation balance, adjusted patent micrometric regulator, patent Breguet hairspring hardened and tempered in form.

No. 9369 Hunting style. . $23 80
No. 9370 Open Face style 23 80

Waltham, Crescent Street Movement

This movement will pass railroad inspection.

Nickel, 19 fine ruby jewels, gold settings, jeweled main wheel bearings, jewel pin set without shellac, double roller escapement, steel escape wheel, exposed pallets, compensation balance in recess, adjusted to temperature, isochronism and five positions, patent Breguet hairspring hardened and tempered in form, patent micrometric regulator, tempered steel safety barrel, exposed winding wheels, double sunk dial

No. 9371 Hunting style . $68 10
No. 9372 Open Face style 68 10

Bunn, 17 jewels, Springfield, Illinois, Movement.

Nickel, 17 fine red ruby jewels, gold settings, adjusted to temperature, six positions and isochronism, carefully timed, highly polished hardened beveled steel escape wheel, chamfered teeth, compensation balance, gold screws, including four timing screws, hand finished conical pivots on balance staff, best quality Swiss Breguet hairspring, Philippe coil, patent micrometric screw regulator, all steel parts highly finished, best quality Swiss mainspring, double sunk glass enameled dial, handsomely damaskeened, gold lettering. Especially adapted for railway service.

No. 9373 Hunting style.. $48 60
No. 9374 Open Face style 48 60

The Dueber Watch Co., 21 Jewels, Nickel, Adjusted Movement.

This movement will pass railroad inspection.

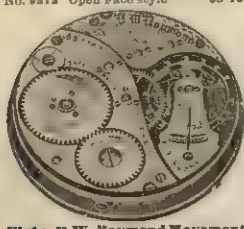
Nickel, 21 fine ruby jewels, in composition settings, micrometric regulator, compensation balance, accurately adjusted to temperature, isochronism and position. Recommended for railway service, Breguet hairspring, patent center pinion, elegantly engraved and damaskeened, first quality mainspring, E. S. F. dial.

No. 9375 **The Dueber Watch Co.,** 21 jewels, Open Face style only $27 00 (This movement not made in Hunting style)

Waltham, P. S. Bartlett, Vanguard Model Movement.

Gilded and nickeled, damaskeened, 17 jewels, red gilded settings, exposed pallets, compensation balance, adjusted to temperature, patent Breguet hairspring hardened and tempered in form, patent micrometric regulator.

No. 9376 Hunting style ... $26 80
No. 9377 Open Face style 26 80



Elgin, B. W. Raymond Movement No. 240. This movement will pass railroad inspection.

¾ plate, nickel, 19 fine ruby jewels (raised gold settings), adjusted to temperature, isochronism and positions, quick train with gold wheels, straight line escapement with steel wheel, exposed pallets, compensation balance, Breguet hai spring, micrometric regulator, patent safety barrel with spring box rigidly mounted on bridge, barrel arbor pivots running in jewels, disp ay winding work, patent recoiling click, patent self-locking setting device, double sunk glass enamel dial, dust ring, damaskeened plates, carefully timed and finely finished throughout. No 9378 Open Face style only $68 10 (This movement not made in Hunting style.)

Elgin, B. W. Raymond Movement.

This movement will pass railroad inspection.

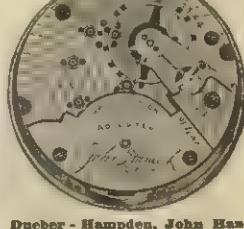
Nickel, 17 ruby jewels, gold settings, adjusted to temperature, isochronism and positions, quick train, straight line escapement with steel escape wheel, exposed pallets, compensating balance, Breguet hairspring, micrometric regulator, patent recoiling click, double sunk dial, dust ring, damaskeened plates, carefully timed and finely finished throughout.

No. 9379 Hunting style $59 60
No. 9380 Open Face style . . 59 60

Waltham, Appleton, Tracy & Co. Movement

Nickel, 17 ruby jewels, gold settings, jewel pin set without shellac, double roller escapement, steel escape wheel, exposed pallets, patent micrometric regulator, compensation balance in recess, adjusted to temperature and three positions, tempered steel safety barrel, exposed winding wheels, patent Breguet hairspring hardened and tempered in form, double sunk dial.

No. 9381 Hunting style..... $44 70
No. 9382 Open Face style..... 44 70



Dueber - Hampden, John Hancock Movement.

This movement will pass railroad inspection.

Nickel, 21 fine ruby and sapphire jewels in gold settings, escapement cap jeweled, compensation balance, adjusted to isochronism and position, Breguet hairspring, new model stud, patent micrometer regulator, bright bevel head screw patent center pinion, polished steel work, double sunk glass enamel dial, finely damaskeened and finished throughout, gold lettering.

No. 9383 Hunting style .$46 00
No. 9384 Open Face style . .. 46 00

We guarantee all our Movements for the following years: 7 jewels, 2 years; 11 jewels, 4 years; 15 jewels, 6 years; 16 jewels, 7 years; 17 jewels, 8 years; 19 jewels and over, 10 years.

The above prices are subject to the regular discount.

FINE FRENCH COMPASSES.

No. 2700.

No. 2702.

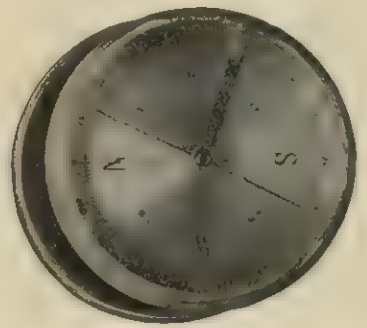
No. 2707.

No. 2705.

No.				Each.
2700	Brass case, with silvered metal dial, brass cap to needle and stop	40 M.	(1 3-5 in.)	$0 95
		45 "	(1 4-5 ")	1 00
		50 "	(2 ")	1 10
2702	Brass case, with silvered metal dial, full divisions, agate cap and stop	40 "	(1 3-5 ")	1 40
		45 "	(1 4-5 ")	1 45
		50 "	(2 ")	1 50
2705	Brass case, with silvered metal dial, brass cap to needle, stop and snap cover	40 "	(1 3-5 ")	1 25
		45 "	(1 4-5 ")	1 35
		50 "	(2 ")	1 40
2707	Same as above, but with jeweled cap to needle and full divisions on dial	40 "	(1 3-5 ")	1 75
		45 "	(1 4-5 ")	1 85
		50 "	(2 ")	1 90

No. 2715.

Our line of compasses is complete. Guaranteed as represented. All orders filled same day received. No delay.



No. 2725

No. 2723.

No. 2734.

				Each.
No. 2725	Heavy nickel-plated case, with pull-off cover, silvered metal dial, full divisions, fine quality bar needle, jeweled, automatic stop	50 M.	(2 in.)	$4 15
		60 "	(2 2-5 ")	4 50
		70 "	(2 4-5 ")	5 25
		80 "	(3 1-5 ")	6 25
No. 2723	Heavy brass case, with double bottom, with silvered metal dial, bar needle, jeweled cap, automatic stop and snap cover, with full divisions on raised circle	50 "	(2 ")	3 25
		60 "	(2 2-5 ")	3 45
		70 "	(2 4-5 ")	4 25
No. 2715	Extra fine accurate watch case compass, nickel hunting case, jeweled needle	40 "	(1 3-5 ")	4 00
		45 "	(1 4-5 ")	4 25
		50 "	(2 ")	4 50
		55 "	(2 1-5 ")	4 80

Wood Case Compasses.

				Each.
No. 2734	Wood case, with cover, card dial, plain needle, automatic stop	70 M.	(2 2-5 in.)	$1 45
No. 2735	" " " " metal " jeweled " " "	70 "	(2 2-5 ")	1 85
No. 2736	" " " " " " " " " "			
	full divisions	70 "	(2 2-5 ")	2 15
No. 2737	Wood case, with cover, metal dial, jeweled needle, automatic stop, full divisions	90 "	(3 3-4 ")	4 40
No. 2738	Same as cut, with divisions on raised circle	90 "	(3 3-4 ")	5 15

The above prices are subject to the regular discount.

Aneroid Barometers, Compasses, Etc.

No. 2202.

Best English Barometer.
(Short & Mason, London.)

With patent auxiliary altitude hand, giving both sea level and altitude readings.

	Rs. 5 in.	Rs. 6 in.
No. 2200 Brass case, closed porcelain dial	$13 10	$19 20
No. 2202 Same as above, open porcelain dial	18 20	24 50
No. 2205 Same as above, closed silvered metal dial	17 30	24 30
No. 2207 Same as above, open silvered metal dial	22 40	29 40
No. 2208 Same as above, open silvered metal dial and thermometer	24 30	31 30

Above barometers are for an altitude to 2,500 feet. For an altitude above 2,500 and under 6,500 feet, $2 10 extra for numbers 2200 and 2202, and for numbers 2205, 2207 and 2208, $6.20 extra. For altitude above 6,500 feet prices furnished on request.

German Barometers.

	Each
No. 3550 3½ in. brass case, closed card dial	$ 7 00
No. 3551 3½ in. as above, open enamel dial	8 40
No. 3554 4½ in. as above, closed card dial	10 65
No. 3555 4½ in. as above, open enamel dial	13 10

ALL ORDERS FILLED SAME DAY RECEIVED. NO DELAY.

No. 2003-A.

Pocket Aneroid Barometers.

Best English make (Short & Mason, London). First quality compensated.

	Each
No. 2003-A 1¾ in. gilt case, silvered metal dial, revolving altitude scale reading to 8,000 feet	$36 00
No. 2003-AB Same as above, 3,000 ft.	39 90
No. 2003-AD " " " 10,000 "	37 55
No. 2003-AE " " " 12 000 "	39 20
No 2003-AF " " " 16,000 "	42 00
No. 2042-AD Same as above, in 2½ in. gilt case reading to 10,000 feet	39 90
No. 2042 AE Same as above, 12,000 ft.	41 45
No. 2042-AF " " " 16,000 "	44 45
No. 2032-D 1¾ in. gilt case, second quality, otherwise same as above, reading to 10,000 feet	18 50

New Barometer with Common Sense Weather Marks.
Patented.
(Short & Mason, London.)

An entirely new arrangement on the dial of the weather marks: Stormy, rain, change, fair, and very dry.

The barometer is provided with two hands, a red hand and a blue hand. The red hand points directly to the proper weather mark and at a glance the weather that is to be can be foretold. The red hand can be accurately adjusted for any altitude to give sea level read ngs, and the blue hand as in the old style barometer gives the altitude reading. It is the only barometer that can be adjusted for any altitude.

In addition to foretelling the weather the barometer is provided with a marking hand for marking the daily position of the red hand whereby the following conditions may be foretold.

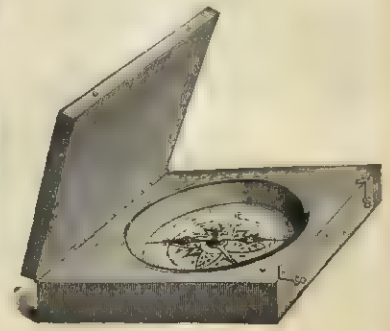
The red hand falls for warm, wet or more wind, and rises for cold, dry or less wind.

No. 2251 5 in. spun brass case, silvered hand engraved brass dial, in plush lined morocco covered wood case ..... each $22 40

COMPASSES.

No. 2922.

No. 2903.



No. 2907.

Best English Make Compasses. (Short & Mason, London.)

		1½ in.	1¾ in.	2 in.
No. 2922	Nickel, Hunting case, automatic stop, tempered edge bar needle with jeweled cap, each	$6 00	$6 50	$8 40
No. 2903	Stout brass box, pull off cover, otherwise same as above, each	3 80	3 80	4 15
No 2907	Polished mahogany square box, otherwise same as above, each	3 80	3 80	4 15

The above prices are subject to the regular discount.

GERMAN BEER STEINS GENUINE IMPORTED GOODS

There is appearance, style, finish and value to this selection that would bring a third more than we quote, if bought from a China house. Remember these are very nice goods.

381 382 383 384 385

No. 952. German Beer Stein. Holds about 1-16 liter, regular style goods made in nice pressed design colored and glazed, with strong handle and polished tin cover; this size is very handy and better liked than the ordinary mug, at the price we quote it is a fine value. Dozen **1.20**

No. 959. German Beer Stein. Holds ⅛ liter, made in a beautiful raised pattern of various figures in combinations, nicely colored and fully glazed, strong round handle with planished tin cover with a lift; this is a popular size as well as a popular seller and profit maker. Dozen **1.50**

No. 381. German Beer Stein, ⅛ liter size, 8 in. high, delft blue color with raised figures and scroll work all around, pewter cover with thumblift, assorted designs, 6 styles in dozen.
Dozen ..... 3.25 Each ..... .30

No. 382. German Beer Stein, ⅛ liter size, 8½ in. high, ecru groundwork ornamented with raised scrolls, figures and picture scenes with German inscriptions; background in red and green, highly glazed; pewter cover with thumblift, 6 designs assorted
Dozen ..... 4.00 Each ..... .35

No. 383. German Beer Stein, ⅛ liter size, 8½ in. high, groundwork in dark ecru color with a raised band around top and raised ornaments all around, front is a scene at an Inn with German inscriptions, background in green and red, front in colors pewter cover with thumblift, finely glazed
Dozen ..... 6.50 Each ..... .60

No. 384. German Beer Stein, ¼ liter size with, false [illegible] high with [illegible] raised [illegible] all [illegible] work [illegible] and [illegible] dark green [illegible] handle, highly glazed pewter cover with thumblift, 6 designs assorted
Dozen ..... 7.00 Each ..... .60

No. 386. German Beer Stein, ½ liter size, fully [illegible] high, [illegible] groundwork in dark color with, beautiful raised [illegible] and [illegible] figures with various colors [illegible] in green, brown and shaded colors, [illegible] bottom, fancy handle, thumblift cover of [illegible] with figure of "that maid" on top, 6 kinds assorted.
Dozen ..... 10.50 Each ..... .90

No. 387. German Beer Stein, ½ liter size 10¾ in. high, dark ecru ground work, highly glazed with [illegible] raised figures and [illegible] in basket style [illegible] dark German [illegible] [illegible] in [illegible] National colors glazed background with inscriptions, the whole one [illegible] false [illegible] and fancy handle, high glazed, pewter cover with thumblift
Dozen ..... 12.50 Each 1.10

No. 385. German Beer Stein, ½ liter size, 9½ in. high, this is a very [illegible] fancy [illegible] top and bottom with [illegible] raised [illegible] in panels [illegible] a little [illegible] [illegible] very beautiful designs, [illegible] highly glazed [illegible] cover with thumblift, 6 designs assorted in dozen.
Dozen ..... 9.00 Each ..... .80

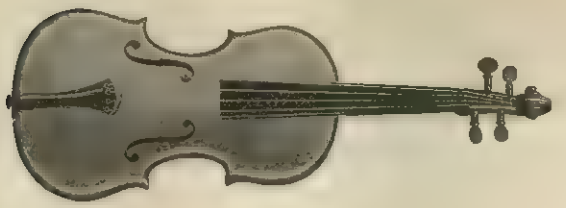
No. 388. German Beer Stein, 2 liter size, 15¾ in. high; [illegible] an extra large and fine [illegible] groundwork [illegible] dark [illegible] fancy [illegible] handle and rustic [illegible] around bottom with flowers, leaves and [illegible] in [illegible] style background [illegible] with [illegible] and [illegible] characters all around, a very [illegible] looking article, pewter cover with thumblift, 6 styles assorted a dozen.
Dozen ..... 16.00 Each 1.60

No. 389. German Beer Stein, 1½ liter size [illegible] beautiful raised enameled figures in [illegible] [illegible] [illegible] the National life all [illegible] glazed finish, special bottom raised band [illegible] [illegible] dark ecru groundwork with dark red and [illegible] [illegible] pewter cover with thumblift, very rich in appearance.
Dozen ..... 21.00 Each 1.80

386 387 388 389

VIOLINS.

GERMAN, RUSSIAN MODEL.



No. 906 Dark red color, shaded, highly polished, rounded edges, ebony finger-board and tail-piece..... .....each, $10 20

GERMAN, ITALIAN SCHOOL.

No. 910	Imitation of old, dark brown color, plain trimmings.	each,	$ 7 10
No. 930	" " " " " good model and finish .	"	9 00
No. 980	Dark brown color, fine model and finish	"	10 55
No. 9118	STRADIVARIUS model, medium brown color, fine model and finish, ebony finger board and tail-piece	"	20 00
No. 9221	" " imitation of old, amber varnished, full ebony trimmed, fine quality.....	"	50 85
No 9226	" " " " " Italian pattern, full ebony trimmed, superior quality...	"	73 20

GERMAN.

The four following numbers represent the celebrated CONSERVATORY VIOLINS, each instrument bearing this brand upon the neck as shown by illustration:

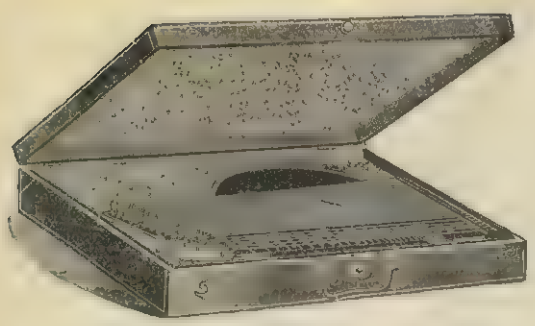
No. 9384	Conservatory, GUARNERIUS model, amber color varnish, shaded ebony finger-board and tail-piece ... .each,		$ 9 20
No 9386	" STRADIVARIUS model, reddish-brown color, ebony finger-board and tail-piece. . ... "		12 55
No. 9388	" " " " " shaded, oil varnished, ebony finger-board and tail-piece .. "		23 55
No 9510	" GUARNERIUS " " " fine imitation of old, oil varnished, rosewood pegs, ebony finger-board and tail-piece .... "		35 80
No 92050	STRADIVARIUS model, dark red-brown, oil varnished, slightly shaded, highly polished, curly maple back, sides and neck, full ebony trimmed .... "		33 00
No. 92052	STRADIVARIUS model, reddish-brown, oil varnished, highly polished, best quality, ebony finger-board and tail-piece, rosewood pegs, flamed maple back, sides and neck, light edges.. .. .. "		41 00
No. 92054	AMATI model, medium amber color varnish, high finish, flamed maple back, sides and neck, back in one piece, best quality ebony trimmings .... "		51 00
No. 92056	STRADIVARIUS model, dark amber color, oil varnished, highly polished, curly maple back and sides, finest quality ebony trimmings ... ... "		56 00
No. 92058	GUARNERIUS model, dark amber color, oil varnished, high finish, flamed maple back, sides and neck, back in one piece, carved ebony tail-piece and pegs, ivory string and tail-piece saddles . . .. "		81 00
No. 92060	STRADIVARIUS model, medium amber color finest quality, oil varnished, highly polished, curly maple back, sides and neck, best quality ebony finger-board and pegs, carved tail-piece..... "		106 00

LADIES' VIOLINS.

No. 9206	LADIES' VIOLIN, amber color varnish, shaded, ebony finger-board and tail-piece..... ... .each		$12 20
No. 9208	" " reddish-brown color, shaded, oil varnished, ebony finger-board and tail-piece . . . . . "		17 55
No. 9209	" " " " " " fine quality, ebony finger-board and tail-piece . . . . "		24 20

The above prices are subject to the regular discount.

ZITHERS.



PRIM SIZE, WITH PATENT HEADS.

No. 913 Imitation rosewood, inlaid sound-hole and edges, in pasteboard case.....each $14 85

CONCERT SIZE, WITH PATENT HEADS.

No. 970 Imitation rosewood, inlaid sound-hole, in pasteboard case. Each.....$19 20

THE "ARION" ZITHER.

OUR OWN MANUFACTURE.

Nos. 9110 and 9111.

PRIM SIZE.

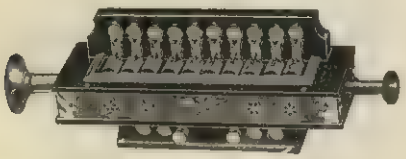
No. 9110 Beautiful imitation rosewood top, inlaid sound-hole, edges bound with wood and celluloid, highly polished, our own make machine head, pasteboard box.....each $25 05

CONCERT SIZE.

No. 9111 Same description as No. 9110, Concert size.....each $26 70

BOW ZITHER.

No. 912 Imitation rosewood, in pasteboard case.....each $13 00



FLUTE ACCORDION.

No. 9326 Ten patent nickel keys, ebonized sides and keyboard with gilt ornaments, nickel corners and trumpet.....each $3 85

VIOLONCELLOS.

WITH PEG HEADS.

No. 912 Reddish-brown color, good quality.....each $17 75

No. 914 Reddish-brown color, better quality.....each 18 50

No. 931 Light red color, good quality, inlaid edges. Each.....26 00

No. 932 Reddish-brown color, good quality, polished, ebony finger-board.....each 36 00

No. 943 Light red color, fine quality, polished, ebony finger-board and tail-piece.....each 46 00

No. 9318 Guarnerius model, reddish-brown color, polished, ebony finger-board and tail-piece.....each 51 00

No. 9350 Stradivarius model, medium red color, highly polished, ebony finger-board and tail-piece.....each 71 00

No. 92080 Amati model, medium amber color varnish, highly polished, curly maple back and sides, full ebony trimmed, extension end pin.....each 117 00

No. 920 Three-quarter size, reddish-brown color, polished, inlaid edges, superior quality.....each 82 00

THE CLARIOPHONE.

No. 9345 Ten bone keys, cylindrical wood body, fancy metal ornaments, with cord.....each $3 66

The above prices are subject to the regular discount.

GERMAN SILVER NICKEL PLATED STARS, SEALS AND BADGES

Prices on all Stars, etc. Illustrated on this page include any ordinary inscription. Extra charge will be made for inscriptions of extra length or fancy designs. Cuts are full size. All stars furnished in Gold Plate at extra cost. List Prices Each.

Individual Satchel Check.
Made of German silver, finely polished and nickel plated, with any inscription.
No. 7850 German silver...each, 50 25
No. 7851 Rolled gold plate " 2 70

No. 7852 Each.....$2 70

No. 7853 Each.....$2 70

No. 7854 Each.....$1 50

No. 7855 Each.....$4 50

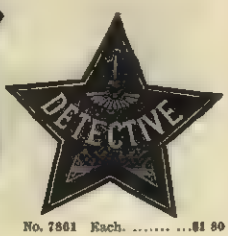
No. 7856 Each.....$1 80

No. 7857 Each.....$1 80

No. 7858 Each.....$3 60

No. 7859 Each.....$1 50

No. 7860 Each.....$2 25

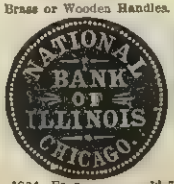


No. 7861 Each.....$1 80

Brass Seals.
Brass or Wooden Handles.

No. 7862 Each.....$1 35

No. 7863 Each.....$1 80



No. 7864 Each.....$2 70

No. 7865 Each.....$1 35

Brass Seals. Brass or Wooden Handles.

No. 7866 Each.....$2 50

No. 7867 Each.....$2 80

No. 7868 Each.....$2 70

No. 7869 Each.....$1 80

New York Standard Chronographs and Horse Timers.

A new chronograph watch that carries with it an individuality in the way of quality and accuracy of performance, lower in price than any other. Fully guaranteed. All parts of this watch are interchangeable and can be procured without delay at a small cost. See general description of movement below. Prices quoted are for the complete watch.

Illustrations are exact size.

JAS. BOSS GOLD FILLED CASE.

Guaranteed for 20 years.

Open Face style, screw back and jointed bezel, independent push pin.

Subject designs or T. & B. engravings.

No. 9773 7 Jewels.....$28 00
No. 9774 10 Jewels..... 30 70

Engine turned or plain cases $1 35 less.

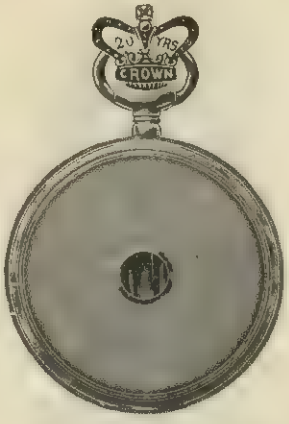
JAS. BOSS GOLD FILLED CASE.

Guaranteed for 25 years.

Subject designs or T. & B. engravings.

No. 9775 7 Jewels.....$35 35
No. 9776 10 Jewels..... 38 00

Engine turned or plain cases $2.00 less.



CROWN GOLD FILLED CASE.

Guaranteed for 20 years.

Open Face style, screw back and jointed bezel, engine turned.

No. 9777 7 Jewels. $23 10
No. 9778 10 Jewels 25 75

Plain polish.

No. 9779 7 Jewels 23 10
No. 9780 10 Jewels..... ..... 25 75

CROWN GOLD FILLED CASE.

Guaranteed for 20 years.

Open Face style, screw back and jointed bezel, horse and jockey designs.

No. 9781 7 Jewels $23 10
No. 9782 10 Jewels. 25 75

Horse and sulky designs.

No. 9783 7 Jewels... .... 23 10
No. 9784 10 Jewels 25 75

Horse head design.

No. 9785 7 Jewels.... .... . . 23 10
No. 9786 10 Jewels 25 75

VICTORY GOLD FILLED CASE.

Guaranteed for 10 years.

Open Face style, screw back and jointed bezel, engraved.

No. 9787 7 Jewels $19 35
No 9788 10 Jewels 22 00

ENGINE TURNED OR PLAIN POLISH.

No 9789 7 Jewels $19 35
No. 9790 10 Jewels.. ..... 22 00

DESCRIPTION OF N. Y. STANDARD CHRONOGRAPH MOVEMENTS.

7 Jewels, Open Face, ¾ plate, lever set, stem wind, train bearings in metal settings, quick train, nickel damaskeened or gilt, one-fifth second start, stop and fly back, operated from the crown.

10 Jewels, Open Face, ¾ plate, lever set, stem wind, train bearings in metal settings, quick train, nickel damaskeened or gilt, one-fifth second, start, stop and fly back, operated from the crown, cut expansion balance, Breguet hairspring. Fully guaranteed.

SILVERODE CASE.

Open Face style, screw back and jointed bezel, plain polish or engine turned.

No. 9791 7 Jewels... ... . $13 75
No. 9792 10 Jewels 16 40

STERLING SILVER CASE.

Plain polish or engine turned

No. 9793 7 Jewels $18 15
No. 9794 10 Jewels 20 80

The above prices are subject to the regular discount.

GENTS' FINE SWISS SPLIT AND SWEEP SECOND CHRONOGRAPHS AND HORSE TIMERS.

Illustrations show exact size. Prices quoted are for the complete watch.

C. L. Guinand's Reliable Split Fifth-Second Horse Timers with 30 Minute Register.

High grade nickel jeweled non-magnetic lever movement, compensation balance, small 16 size, new thin model, full bassine case, running of movement does not stop in operating hands; thoroughly reliable.

No. 9742 In nickel case $42 00
No. 9743 In black oxidized steel case..... 43 00
No. 9744 In solid silver case. 51 35
No. 9745 In 10k gold filled 20 year warranted case..... 70 00

Jockey Club Split Second Horse Timer, Fifth-Second with 30 Minute Register.

Small, 16 size, Open Face, nickel case, round bow with fine grade nickel lever, jeweled, non-magnetic movement.

No. 9746 In nickel case..... $40 00
No. 9747 In gun metal case 40 00

National Park Chronographs with 30 Minute Register, Beats 1-5 Second, Start, Stop and Fly Back from Crown.

No. 9756 Nickel case, fine nickel lever movement, 11 jewels..... $34 30
No. 9757 Nickel case, fine nickel lever movement, 15 jewels..... 40 00
No. 9758 Oxidized steel case, nickel lever movement, 11 jewels 35 75
No. 9759 Silver case and cap, nickel lever movement, 11 jewels..... 42 00
No. 9760 14k filled case, antique bow, 25 year guarantee, plain or engine turned, fine nickel lever movement, 15 jewels..... 64 55

National Park Chronographs, Fifth-Second, Start, Stop and Fly Back from Crown.

No. 9748 Nickel case, fine lever movement, 11 jewels $28 00
No. 9749 Oxidized steel case, nickel lever movement, 11 jewels. 29 60
No. 9750 Solid silver case and cap, fine nickel lever movement, 11 jewels 34 30
No. 9751 14k filled case, 25 year guarantee, plain or engine turned, antique bow, nickel lever movement, 7 jewels 51 35
No. 9752 14k filled case, 25 year guarantee, plain or engine turned, antique bow, nickel 15 jewel lever movement..... 55 35

Guinand's Reliable Fifth-Second Split Chronographs with 30 Minute Register.

Open Face, 16 size, (18 ligne), finely finished nickel lever movement, with Breguet hairspring.

No. 9761 14k solid gold, very accurate, plain bassine, heavy case, 17 jeweled adjusted lever movement, patent regulator, ruby jewels in raised settings..... $380 00
No. 9762 14k solid gold, plain bassine case, 15 jeweled, Jules Racine lever movement. 223 35
No. 9763 14k solid gold, plain bassine case, 13 jeweled Guinand lever movement..... 186 70
No. 9764 14k 25 year filled case, 13 jeweled Guinand lever movement..... 130 70
No. 9765 Silver, plain bassine case, 13 jeweled Guinand lever movement 109 10
No. 9766 Gun metal, bassine case, 13 jeweled Guinand lever movement 102 70

All the above are thoroughly reliable.

National Park Horse Timers with 30 Minute Register and Fifth-Second Jeweled Lever Movement.

Thin model. Best in the market.

No. 9753 With nickel case $14 80
No. 9754 With gun metal case 15 60
No. 9755 Nameless movement in nickel case 14 00

Horse Timer with 30 Minute Register Fifth-Second, Start, Stop and Fly Back from Crown.

Jewel cylinder movement, new thin model, accurate and reliable in action.

No. 9767 Nameless movement, nickel case. $11 75
No. 9768 National Park or Trotter, nickel case 12 55
No. 9769 Trotter (gun metal) case..... 12 55
No. 9770 Nameless movement, gun metal case 12 55

Huguenin's Reliable Minute Repeater and Chronograph with Minute Register.

Open Face (19 ligne), fine 15 jewel nickel lever movement, Breguet hairspring, exposed ruby pallets, starts, stops and fly back from crown; strikes hours, quarters and minutes. A reliable new watch at a low priced case.

No. 9771 Gun metal case..... $100 00
Same grade Minute Repeating Watch without chronograph attachment.
No. 9772 Gun metal case..... 76 55

The above prices are subject to the regular discount.

Illustrations are exact size.
Prices quoted are for the complete watch.

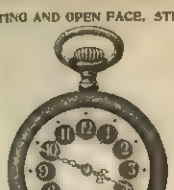
Ladies' Swiss Chatelaine Complete Watches.

HUNTING AND OPEN FACE. STEM WIND AND SET. PRICES EACH

10k Solid Gold.
Open Face, 11 ligne, 10k solid gold plain case, 5 rose diamonds, (paved set), 7-jewel cylinder movement, pend nt set.
No. 9675 Fleur-de-lis design $16 70
No. 9676 Star and crescent design 16 70
Same style watch
No. 9677 Hunting case 23 35

Gun Metal.
Open Face, 11 ligne, gun metal bassine polished case, full-jeweled cylinder movement, fancy metal frame dial, pendant set.
No. 9678 ..... $8 40

New Very Thin Model Chatelaine Watch.
Open Face, 11 ligne, very finely finished, full-jeweled cylinder movement, pendant set, plain polished bassine case with snap cap, silver or gilt dial, black figures.
No. 9679 Gun metal .. $12 70
No. 9680 Sterling silver 14 60
No. 9681 14k gold 43 60
No. 9682 9k gold. 29 10



Gun Metal.
Open Face, 11 ligne, gun metal, bassine case, jeweled **Lady Racine** cylinder movement, fancy enamel dial, fancy gilt hands. Best Chatelaine watch in the market.
No. 9683. $12 15
No. 9684 Plain dial 11 35
12 ligne Lady Racine watch as above with second dial.
No. 9685 Plain dial. $11 75
No. 9686 Rich fancy dial 12 55

Gun Metal.
Open Face, 11 ligne, gun metal bassine case with snap cap silver trimmed, full-jewel cylinder movement, gold hands, pendant set, with chatelaine pin to match.
No. 9687 Fancy dial. $9 20
No. 9688 Plain " 8 70

Solid Gold.
Open Face, 10 ligne, 10k solid gold plain polished case, plated cap, full-jeweled nickel cylinder movement, fancy dial, with fine solid gold chatelaine pin as shown above.
No. 9689 ..... $19 35
Watch without chatelaine pin.
No. 9690 ..... $14 80

Solid Gold.
Open Face, 10 ligne, 10k solid gold, with fancy embossed decorated dials and gold hands. The figures are on crystal inlaid panels with white back ground. Movement is stem wind and pendant set, cylinder escapement with jewels.
No. 9691 ..... $14 80
Same watch with cream dial, embossed colored enameled figures.
No. 9692 ..... $14 80

Solid Gold, The Guinand.
Solid gold, Open Face, 11 ligne, nicely engraved or plain polished case, plated cap, full jeweled nickel, well finished cylinder Guinand pendant set movement.
No. 9693 10k engraved..... $18 70
No. 9694 14k " 21 90
No. 9695 10k plain. 18 00
No. 9696 14k " 21 10

Solid Gold, The Guinand.
Solid gold, 11 ligne, Huntng, fancy engraved or plain polished case plated cap, fitted with best quality nickel full-jeweled movement, pendant set, decorated enameled dial and gold hands
No. 9697 10k engraved $25 90
No. 9698 14k " 31 50
No. 9699 10k plain polished 24 15
No. 9700 14k " 30 00

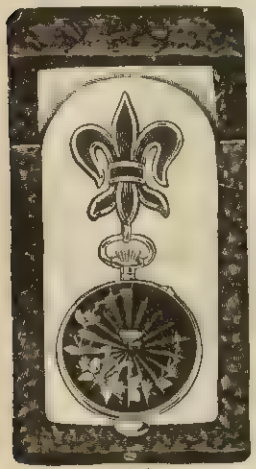
Lady Racine, 14k Gold Filled.
Open Face, 11 ligne, 14k gold filled, 20 year warranted, plain polished or satin finished bassine case, pendant set, jeweled, Lady Racine movement. Very reliable and fills a long felt want.
No. 9701 ..... $18 70

Style G.

Fancy Enameled Chatelaine with Reversible Swivel Pendant.
11 ligne, Open Face, high grade enamel watch, gold filled centers and pendant, swivel pendant which is reversible, enamel colors are red, blue, green and turquoise, backs are decorated with fancy inlaid designs, movement has **lever escapement**, 11 jewels, bridge model, engraved winding wheels, second hand, cream colored fancy dial and gilt hands.
No. 9702 ..... $23 20

Style H.

14k Solid Gold.
Open Face, very small, 10 ligne 14k solid gold, plain bassine, gold cap case, rich cream enameled dial, a very reliable watch.
No. 9703 With full-jeweled **Lady Racine** cylinder movement $23 95
No. 9704 With very fine 7-jewel **Lady Racine** lever movement, fancy dial $43 90



Style F.

Open Face, 11 ligne, transparent hard enamel back and front inlaid decorations, assorted designs or plain enamel, assorted colors, gold plated centers and pendants. Full-jeweled cylinder movements, reversible swivel pendant on case, complete with enameled pin and plush box.
No. 9705 Plain enamel .. $11 55
No. 9706 Inlaid enamel ... 12 80
Watch only, without pin or box
No. 9707 Plain enamel . $ 9 90
No. 9708 Inlaid enamel..... 10 95

Style A.

Style B.

Style C.

Style D.

Style E.

(When ordering enameled watches, state color and design desired, also make a second choice.)

Fancy Enameled Chatelaine Watches

Open Face, 11 ligne, beautifully transparent hard enamel back and front, gold filled centers and pendants, rich colors in dark blue, red, green and turquoise blue, elegant assorted gold inlaid decorations, some with Louis XV designs, all fitted with reliable full-jeweled stem wind and set movements with enameled, gold plated or gold filled pins, and silk plush boxes to match watch. Reliable goods and bargains.

No. 9709 Watches only, full-jeweled cylinder movements, any design or color	$10 95
No. 9710 Watches only with full jewelry lever **Lady Racine** movement, best in the market	17 35
No. 9711 Watches only, with **7-jewel Lever Lady Racine Movement**	26 40
No. 9712 Nameless watches, No. 9709 with enameled pin and plush box to match	12 80
No. 9713 **Lady Racine Cylinder Watch** No. 9710 with gold filled enameled pin and silk plush box to match	20 55
No. 9714 **Lady Racine 7-jewel Lever Watch**, No. 9711, with gold filled enameled pin and silk plush box to match	29 10

The above prices are subject to the regular discount.

Repeating, Calendar and Miscellaneous Swiss Watches.

Illustrations show exact size.
Quality guaranteed.

Prices quoted are for the complete watch.

Roskopf Panoramic Watch.

Open Face, jointed case, gilt crown and bow, 5-jewel lever movement, gilt or silver dial, revolving circle of photos (pictures of heads and figures) instead of second hand

No. 9715 Gun metal case..... .....$6 70

Same watch without panoramic pictures, plain white dial, fancy gilt hands.

No. 9716 Gun metal case..... 4 70

No 9717 Nickel case.... .. 4 55

Alarm Watch.

7-jewel, lever movement, one winding winds both alarm and watch. A date reminder for pocket or desk

No. 9718 Gun metal case..... ..... $16 00

Same style watch with cylinder movement

No. 9719 Gun metal case $12 35

Nurses' Watch.

0 size, 13 ligne, Open Face, solid sterling silver, plain bassine case, fine 15-jewel gilt lever Racine movement and center second, very reliable.

No. 9721. ....$29 35

Same movement in solid 14k gold case.

No. 9722 .. .. 69 35

Same movement in a gun metal case.

No. 9723 ... . 26 70

Same movement in a gold filled case. Warranted for 20 years.

No. 9724 . 50 00

The Automatic Calendar Watch.

The most perfect calendar watch ever made. Simple and durable. Can be manipulated, when necessary, without the aid of any tools.

Cut displays back of the watch, showing the day of the week, date of the month, and month. The date changes automatically once every 24 hours—at 12 o'clock midnight.

The case is made of gun metal, either highly polished or plain satin finished; both bezels, front and back, as well as crown and bow, are gold trimmed.

The movement is a finely finished nickel, 15-jeweled lever escapement, and guranteed to be an accurate timepiece. The face is the same as any ordinary watch; white glass enamel dial with Roman or Arabic figures and blue steel hands.

It is not alone a novelty but an article of utility.

No 9740 Each..... .. .. $20 00

Guinand's Reliable Minute Repeater.

12 size (17 ligne), thin model, 14k gold, heavy plain bassine or E. T. case, 23 ruby jewel nickel movement, Breguet hairspring, patent regulator, exposed pallets, very finely finished; strikes hours, quarters and minutes.

No. 9725 Open Face $373 35

No. 9726 Hunting case..... 405 35

Guinand nameless minute repeating watch, same size quality case and movement as described above.

No. 9727 Open Face.....$288 70

Nameless 1-4 Hour Repeater.

16 size, Open Face, bassine case, 15-jewel nickel lever movement, Breguet hairspring, pendant set. Strikes hours and quarters.

No 9728 Gun metal case. 58 80

No. 9729 Silver case 49 35

No 9730 14k solid gold, plain case.. .. . 103 55

New Thin Model Gun Metal and Nickel Watches.

14 size, Open Face, thin model, bassine, gun metal case, gilt antique bow and crown, jointed with inside cap, ¼ plate, 7-jewel lever movement, patent double regulator, pendant set, the most reliable watch made for the money.

No. 9731 With cream colored dial and embossed enamel figures in three colors, red, blue and green, gold minute dots, gilt hands $11 75

No. 9732 Same watch with gilt metal dial, black figures and steel fleur-de-lis hands. 11 75

No. 9733 Same watch with plain white imitation double sunk dial, steel spade hands. .. 11 10

No. 9734 Same watch in nickel case and plain white imitation double sunk dial, steel spade hands..... ..... 10 70

Self-Acting Calendar Watch.

Gives day, date, month and all changes of the moon. Makes all changes at midnight. Reliable in action and good timekeeper.

No. 9735 Nickel case, 7-jeweled lever movement.....$10 00

No. 9736 Gun metal case, 7-jeweled lever movement 10 00

No. 9737 Gun metal case, 11-jeweled lever movement..... 12 55

No. 9738 Silver case, 11-jeweled lever movement..... ..... 16 40

Continental Calendar Watch.

Fine nickel. 15-jeweled lever movement. Fully guaranteed. Best in the market.

No. 9739 With gun metal case.....$20 15

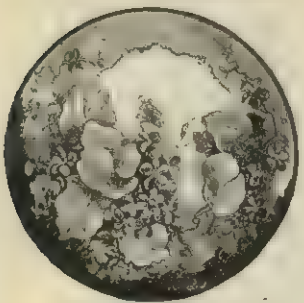
No. 9740 Fine silver case.. ..... 23 60

No. 9741 15 year gold filled case... ... . 43 60

The above prices are subject to the regular discount.

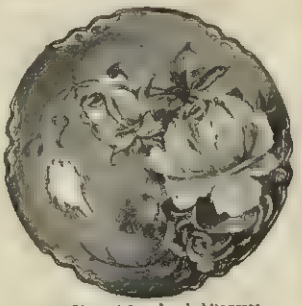
GENUINE FINE HAND PAINTED CHINA

Genuine Hand Painted China is getting more popular every day, and is considered a good staple selling article with the merchant. Our china, by reason of the high class work put upon it, shows its beauty and life not equaled by any other line. We show on this and the following page pieces that have proven to be the very best sellers. Order a sample line for your inspection to be returned at our expense if not entirely satisfactory. Breakage guaranteed.



No. 53 9¼-inch Plate, violets, gold border. Each $3 90

No. 54 9¼-inch Rose Plate, light green tinting, gold border ..... each, $4 20



No. 145 9-inch Plate, pink, red and white roses, brown and blue tinting ..... each, $4 70

No. 143 9¼-inch Plate, large chrysanthemums, white and red, light tinting, gold border, each, $5 25

No. 144 9¼-inch Plate, blue design, light blue and red tinting, gold border ..... each, $5 90

No. 18B 9¼-inch Plate, large pink, red and white roses, fancy gold border ..... each, $6 20

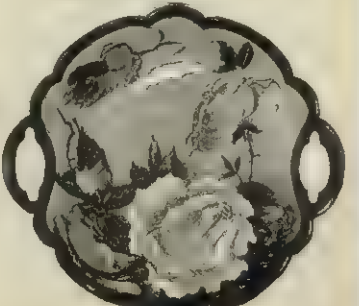
No. 58B 9¼-inch Plate, roses, water and scenic effect, gold border ..... each, $6 70

No. 141 9¼-inch Plate, ocean scene, mountain and trees in background, gold border, each, $6 70

No. 56D 9¼-inch Fruit Plate, peaches, cherries, pineapple and banana, dark brown tinting, gold border ..... each, $6 70

No. 61 10¾-inch Cake Plate, large red, pink, white roses, ½-inch gold border ..... each, $9 20

No. 102 9¼-inch Plate, tulip decoration, brown tinting, heavy gold border. each, $9 55



Cake Plate, 11½-inch in diameter, large white roses, blue tinting ..... each, $12 70

The above prices are subject to the regular discount.

CAMP STOVES.

CAMPERS'

OUTING

HAPPY ROVER.

Campers'.

No. 425 [illegible] with 3 cage doors, two holes with covers, six feet telescope pipe size 23 × 12 × 12 in., oven [illegible] each $1 70

Outing

No. 50 [illegible] weight [illegible] each 54 00

Happy Rover with Lined Fire Box 6 Feet Nested Stove Pipe and Tinned Tent Protector

No. 24—Size 24x14x10 in., oven 22x14 in., fire box 9x14 in. weight about 34 lbs each $6 75

No. [illegible] 8 00

LITTLE PET.

SPORTSMAN'S.

No. [illegible] each 5 6 00

No. [illegible] 00

No. 320 [illegible] gauge steel, with hearth, weight 36 lbs. each $10.00

No. 420 [illegible] gauge steel, without hearth, weight 30 lbs. 12.50

HARMONICAS.

The Harmonica, like the gurgling brook, goes on forever. Its manufacturers, taking advantage of the assured demand, spare no expense in making improvements, so our stock today embraces models and varieties far surpassing all previous conditions.

THE NESTOR.

No. 9361 10 holes, white nickel reed plates, nickel covers, length 4 inches .....each, 70c

THE PHONOGRAPH HARP.

No. 9363 10 holes, white reed plates, nickel covers, length 4 inches .....each, 70c

THE GLOBE TROTTER.

No. 9382 10 single holes, 20 reeds, brass plates, nickel covers, perfectly tuned, best quality; each in a well made hinged carton, length 4 inches .....each, $1 20

THE NAVY BAND.

No. 9386 10 single holes, 20 reeds, brass plates, heavy convex brass covers, open back, finely nickel plated, best quality steel bronze reeds, each in a well made hinged carton, length 4 in..$1 35

THE METEOR.

No. 9384 10 double holes, 40 reeds, brass reed plates, brass covers, finely nickel plated, fine concert, each in a hinged pasteboard box length 4 inches $2 40

TOY RICHTER—In Pasteboard Boxes.

No. 9951 10 single holes, zinc reed plate, nickel covers.. ..each, 10c

THE TROUBADOUR.

No. 9928 10 single holes, white reed plates, nickel covers..each, 20c

GEBRÜDER LUDWIG—Richter pattern.

No 9932 10 single holes, brass reed plate, nickel covers....each, 25c

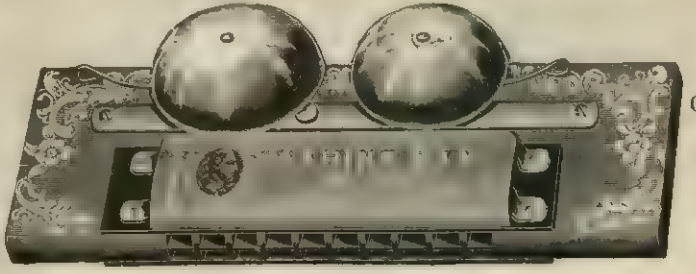
M. HOHNER.

No. 9934-B 10 single holes, 20 reeds, brass plates, nickel covers ...each, 60c

M. HOHNER.

No. 9936 14 double holes, 28 reeds, brass plates, nickel covers .....each, 80c

ALL ORDERS FILLED SAME DAY RECEIVED. NO DELAY.



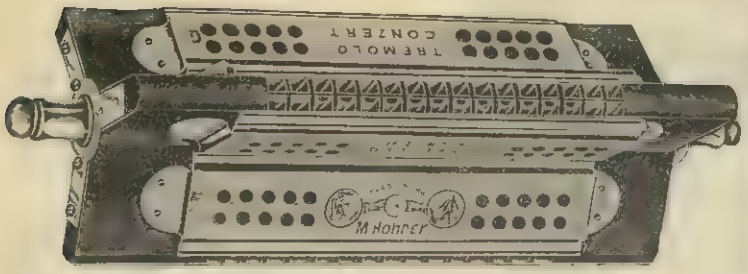
FINEST GOODS ON THE MARKET. FINEST DESIGNS. BEST QUALITY.

MARINE BAND.

No. 920 10 double holes, 20 reeds, brass plates, nickel covers, extension ends, finely silver stamped, with two improved patented bells. Each $1 20

The above prices are subject to the regular discount.

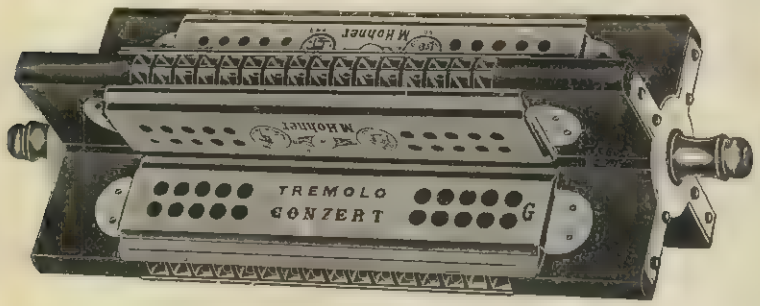
HARMONICAS.



TREMOLO HARPS.

THREE SIDES.

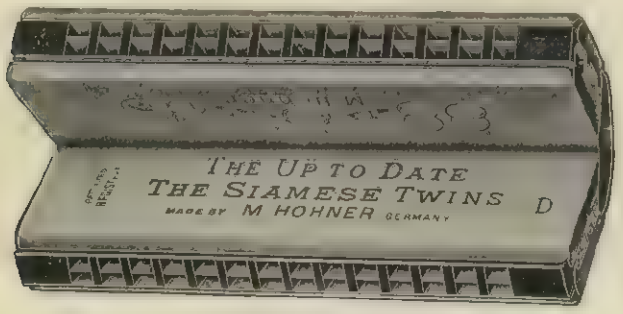
No. 9252/96 48 double holes, 96 reeds, brass plates, nickel covers, three sides, three different keys ..... each, $3 50



FOUR SIDES.

No. 9252 128 64 double holes, 128 reeds, brass plates, nickel covers, four sides, four different keys ..... each, $4 75

No. 9250 10 single holes, 20 reeds, brass plates, nickel plated covers, attached to very attractive colored cartridge shell which is detachable. Produces all effects from softest tremolo to the most sonorous tone, by vibrating the hand over the mouth of the shell, each, $1 00 (Cut actual size.)

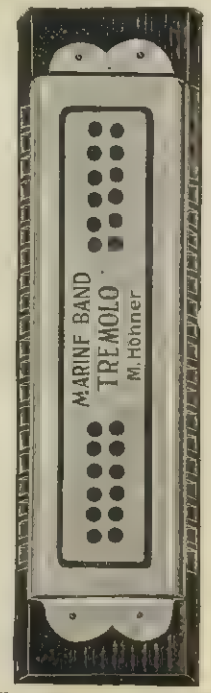


SIAMESE TWINS.

No. 91006 14 double holes on each side, 24 single reeds on each side, brass plates, nickel covers..... each, $1 40

No. 91007 40 double holes, 80 reeds. ..... " 2 75

No. 953 24 double holes, 48 silver reeds, brass plates, nickel covers, extension ends, finely silver stamped ..... each, $2 00

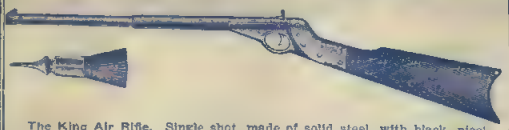


No. 937 40 double holes, 80 reeds, brass plates, nickel covers, extension ends, two harmons in one, two different keys, length 8 inches..... each, $2 00

The above prices are subject to the regular discount.

THE SHURE WINNER PRICE LIST

Air Rifles and Darts



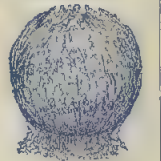
The King Air Rifle. Single shot, made of solid steel, with black, nickel finished stock. Barrel is nickeled and polished, rounded stock and pistol grip. A reliable and durable air rifle, made with latest improvements. Shoots B. B. shot or darts. All parts interchangeable for repairs.
Per dozen 4.50
Darts for above Dozen ..... 22 Gross 2.25

Daisy 20th Century Air Rifle. Steel barrel and working parts, finely nickel plated, black walnut stock and improved globe sight, all parts interchangeable. Shoots BB shot or darts. Dozen 6.25
Daisy Repeater. Made of steel with walnut stock, all working parts steel, finely nickel plated, shoots 40 times without reloading. All parts interchangeable, rounded stock and pistol grip. Dozen 8.10
"Darts" for Air Rifles. Made in the best approved style of proper material to make it most effective and satisfactory in use.
Dozen ..... 22 Gross 2.25

The Resurrection Plant

Spoken of in the Bible as "The Rose of Jericho"

In Growing State.



In Dry State.

The Sacred Resurrection Plant (Siempre Viva). Botanically known as Anastatica. Latin name, Selaginella Lepidolphylla. These rare and curious plants grow and stay green by placing them into water, will also grow in light drained soil. When taken out of water they dry and curl up and go to sleep. They will keep in this state for years and reawaken directly upon being put into water. It's an interesting and pretty house plant of very agreeable fragrance; grows in winter if not allowed to freeze. To grow it, simply place the whole plant into water, it will open up and start to grow in about twenty minutes, after that simply keep the roots in water, change the water once in about four or five days to keep from becoming rancid. Per 100..... 1.75 | Per 1,000..... 10.50

ADVERTISING PUZZLE.

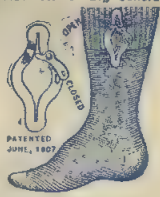
No. 1069. Advertising Puzzle. A pocket piece with plain back on which an advertisement can be printed, shape and size of a mirror, glass top encasing a negro face and several pills which to shape into the negro's mouth is a pretty trick.
Per gross 1.25

NEW FANCY WHISTLE.

No. 217. French Wood Whistle, 2½ in. long, machine turned in fancy shape with knob and steel ring for suspending, striped red and green color on yellow finish, double cut whistle, blows from 2 sides, very loud and shrill; one gross in package.
Gross ..... .90

SPECIALTIES FOR STREETMEN

New Items—Big Sellers.



No. 324. New Sanitary Hose Supporters. Made of aluminum and is regular feather-weight and the only kind that a Doctor will recommend for men to wear as they are the simplest and yet effective and do not cramp pinch or bind the limb like ordinary elastic goods which are injurious to the circulation of the blood. These are made of aluminum in the shape of a loop; are quickly fastened, easily detached and ought to be a bonanza for Streetmen, Canvassers and Special Dealers; just new and patented.
Per gross pairs..... 8.75
Per dozen pairs ..... .75

No. 1056. New Key Ring, fancy shapes, triangle, oblong oval, heart and other fancy shapes, assorted 12 rings sewed on card. These goods are made of the very best tempered steel, heavily nickel plated different in finish from the ordinary rings.
Gross ..... 2.20 Dozen ..... .20

CARNIVAL ZOBOYS.

No. 6. Zoboy. Talk into it with a singing voice; you can imitate any instrument, or the bleating animals, etc.; covered with striped red, white and blue paper, 8 inches long. Gross ..... .88

NICKEL FLAGEOLET.

No. 143. Nickel Flageolet, 10½ in. long, shaped mouthpiece made of heavy tin metal nickelplated and highly polished, 6 key holes tapering to end, produces sweet flute music in regular scale pitch.
Gross ..... 4.00 | Dozen ..... .35

BULK GLUES.

Our glues are made of the very best selected material and we guarantee them to run uniform in grade and quality

	IN BARRELS	LESS QUANTITY
E. S. Amber In sheets of 2×4 packed in barrels of about 250 lbs., per pound	30 21	$0.22½
A first class joining glue for general purposes, such as hardwoods.		
E3 Pure Hide Glue—In broken flake form, packed in barrels of about 250 lbs. per pound	.22	24
A high grade joining, especially adapted for fine cabinet work.		
B Amber—Broken flake glue, packed in barrels of about 250 lbs., per pound	.21½	23½
A cheaper joining glue, good for soft wood work, also [illegible]		
Snow Stock Broken flake gelatine packed in barrels of about 275 lbs. per pound	24	.25½
A clean, pure gelatine glue for extra fine sizing, calcimining and painters glue; also good for general work where the very best glue is required.		
Hide Stock Calcimining Glue—Broken flake, in barrels of about 245 lbs. per pound	22½	.24
A high grade of opaque glue, better known as LX, good for joining where a high glue is required.		
Hide and Snow Ground Glue Packed in barrels of about 400 lbs. per pound	.18	.19½
A good glue for sizing, paper box work, and also for general use. It dissolves very rapidly		
White Thin Stock—Broken flake in barrels of about 200 lbs. per pound	23½	.24
or very fine calcimining and tinting, where it requires a pure white glue.		
A White—Broken flake in barrels of about 250 lbs. per pound	.18	19½
Also a first class calcimining glue. Thicker but [illegible] than the white thin stock		
H. S. B. White Ground—In barrels of about 400 lbs. per pound	.21	22½
A general calcimining glue, dissolving very fast, and does the very best of work. We recommend this very highly		

We can furnish any of the above glues in ground form at the additional cost of ½ cent per pound

A Painter to the Glue User.

In all cases, use ground glue if possible, as it will save considerable time in getting your glue ready for use, as it dissolves considerably faster than the flake glue and also requires less attention. It is best to soak the glue in cold water for an hour or so, then add hot water and in a very few minutes will be ready for use.

LIQUID GLUES.

ARMY AND NAVY.

With Brush.

1 oz	Bottles, wt per doz 2 lbs	per dozen	$ .20
2 oz	Bottles, wt per doz 3 lbs	"	.50
½ gill	Cans, wt per doz 4 lbs	"	.8
1 gill	Cans, wt per doz 6 lbs	"	2.40

HALF PINT CANS, TWO DOZEN IN A CASE

Without Brush.

½ pt	Cans, wt per doz 3 lbs	per dozen	$ .35
1 pt	Cans, wt per doz 6 lbs		.50
1 qt	Cans, wt per doz 35 lbs		2.50
½ gal	Cans, wt per doz 6 lbs		15.00
1 gal	Cans, wt per doz lbs		2.00

½ PT CANS, TWO DOZEN IN A CASE. PT CANS, ONE DOZEN IN A CASE. ½ GAL CANS, SIX IN A CASE

Collapsible Tubes.

No 3	[illegible] in., wt per doz. 2½ lbs.,	per dozen	$0.60
No 4	[illegible] in., wt per doz. 3½ lbs.		.70
No 5	[illegible] in., wt per doz. 4½ lbs.		.80

THREE DOZEN IN A BOX

LE PAGE'S.

With Brush.

1 oz.	Bottles, wt per doz. 2 lbs.	per dozen	$1.20
2 oz.	Bottles, wt per doz. 4 lbs.	"	1.80
½ g	Cans, [illegible] wt per doz. 7 lbs.	"	1.80
1 ga	Cans, [illegible] wt per doz. lbs.	"	2.25

ONE GROSS 1 OZ. BOTTLES, HALF GROSS 2 OZ. BOTTLES AND THREE DOZEN ½ AND 1 GILL CANS IN A CASE.

Patent Top, without Brush

½ pt.	Cans, wt per doz. 12 lbs.,	per dozen	$ 5.00
1 pt.	Cans, wt per doz. 18 lbs.,	"	5.75
1 qt.	Cans, wt per doz. 36 lbs.,	"	10.00
½ gal.	Cans, wt per doz. 66 lbs.,	"	18.40
1 gal.	Cans, wt per doz. 132 lbs.,	"	36.00

½ PT CANS, WOOD PACKED, 1 PT AND QT ONE DOZEN, ½ AND 1 GAL SIX DOZEN IN A CASE

Self-Sealing Collapsible Tubes.

No. 1	[illegible] in., wt per doz. 1½ lbs.,	per dozen	$1.20
No. 2	[illegible] in., wt per doz. 1½ lbs.		1.80

TWO DOZEN IN A BOX WITH HANDSOME [illegible]

Retail Assortments.

No 1	[illegible]	[illegible]	$4.50

[illegible] with [illegible]

PUTTY.

"OUR VERY BEST," STRICTLY PURE.

Absolutely Pure Linseed Oil and Whiting.

Barrels about 800 lbs.),	per 100 pounds	$2 85
Tubs about 600 lbs.),		3 00
Bladders, in barrels (about 400 lbs.		3 25
Bladders, in less quantity		3 40
100 lb. Tin Jacket Kits,		3 45
50 lb Tin Jacket Kits,		3 70
25 lb Tin Jacket Kits,		3 90
10 lb. Tin Jacket Pails,		4 15

Spreads smoothly and firmly under the knife dries with a hard surface and never shrinks or cracks.

COMMERCIAL OR GLAZIERS'.

Missouri Whiting and Pure Oil

Barrels (about 800 lbs.	per 100 pounds	$2 [illegible]
Tubs (about 600 lbs.),		2 90
Bladders, in barrels (about 400 lbs.),		2 85
Bladders, in less quantity		3 00
100 lb. Tin Jacket Kits,		3 10
50 lb. Tin Jacket Kits,		3 30
25 lb. Tin Jacket Kits,		3 55
10 lb. Tin Jacket Pails,		3 75

STOVE PUTTY

Or Iron Cement.

5 and 10 lb Cans, per pound $0 06½

For mounting and repairing stoves and ranges. It bakes hard and adheres firmly to the castings, preventing the escape of gas and ashes. Will keep soft a long time in the package. Used by stove manufacturers in the United States and Canada.

FURNACE CEMENT.

Asbestos, Fire-proof.

5 and 10 lb. Cans, per pound $0.07

This cement is composed of asbestos materials and is used for mounting and repairing stoves, ranges, heaters, furnaces, etc., making them gas tight. Prepared ready for use. Adheres only to the castings, sets in a few hours, odorless, contains no [illegible]. Acids and chemicals have no effect on it.

POWDERED LYE

Or Potash.

1 lb. Cans, sifting top, 48 in a case, per case $4.50

For painters and printers also for making hard or soft soap; for removing old paint, varnish, grease, tar and pitch. Full directions on each can.

CHLORIDE OF LIME

Or Bleaching Powder

		Price per Case	Less Quantity
1 lb Cans, sifting top	50 in a case, per pound 3C		$0 [illegible]
½ lb Cans, sifting top	100 in a case	3	1¢
¼ lb. Cans	[illegible] in a case		1¢

For deodorizing and disinfecting purposes, purifying drains, water closets, cesspools, etc. Full directions on each can.

ROSIN.

Lump, per pound $0 03

BORAX.

Lump, per pound $0 15

Powdered, 20-Mule Team, [illegible] 1¢

COMPASSES.

No. 3— [illegible] each $ 4 40
No. 4— [illegible]
No. 8— [illegible]
No. 10— [illegible]
No. 11 [illegible] hinged cover, beveled glass, metal dial, full division, jeweled [illegible]
No. 15— [illegible] cover, Engine turned [illegible] 40 50

No. 20

No. 20—Marine [illegible] reversing dial, jewel capped needle, brass gimbal with [illegible] each $ 10 00
No. 12— [illegible] watch case, [illegible] dial plate, [illegible] jeweled [illegible] 25
No. 17— [illegible] hinged rosewood case, metal dial, full division [illegible]

FIELD AND MARINE GLASSES.

No. 25

No. [illegible]

No. 716

"Lemaire," Achromatic, Morocco Covered Metal Body, Bright Finish, with Case and Strap.

No. 1250—19 lignes, length [illegible] each $ 0.50
No. 1250—21 lignes, length [illegible] 25
No. 1250—24 lignes, length, [illegible] power 4 diameter 13 00
No. 1250—26 lignes, length, [illegible] power 5 diameter 14 50

"Lemaire's," Morocco Covered Metal Body, Bright Finish, Sole Leather Case and Strap

No. 1100 —19 lignes, length, [illegible] each $23.25
No. 1100 21 lignes, length [illegible] 24 75
No. 1100 24 lignes, length [illegible]
No. 1100 26 lignes, [illegible]
No. 1100B [illegible]
No. 1100B 24 lignes, length [illegible]

NEWMAN WATCHMEN'S CLOCKS.

PORTABLE.

No. 8—8 keys, diameter 4 [illegible] with [illegible] 4 in. brass station box, [illegible] movement [illegible] 55 [illegible] ping weight 25 lbs.

No. 16—16 keys, diameter 4½ in., otherwise same as No. 8, shipping weight 30 lbs.

Portable watchmen have [illegible] to the [illegible] watchmen [illegible] with the [illegible] one [illegible] key [illegible] tag and by other [illegible] as well as [illegible] underwriters, [illegible] gauge [illegible] inspection [illegible] as marked) [illegible] may [illegible] can be used [illegible] railroad yards, [illegible] factories that are [illegible] and [illegible] by the city [illegible] [illegible] [illegible]

The [illegible] keep [illegible] watchmen [illegible] station [illegible] each key is [illegible] station [illegible] to [illegible] [illegible] [illegible]

NEW HAVEN CLOCKS.

LEVER.

Wood Lever, Polished Veneered.

8 Day Time, 6 [illegible]	each	$4 45
8 Day Time, 8 [illegible]		5 00
8 Day Time, 10 [illegible]		5 60
8 Day Time, 12 [illegible]		6 50

Wood Lever, Polished Veneered.

8 Day Time, Calendar, 8 in. dial	each	$4.50
8 Day Time, Calendar, 10 in. dial	"	5.25

WEIGHT [illegible] LBS

OFFICE

10 Inch, Drop Octagon, Height 21 Inches, Dial 10 Inches,
Rosewood or Oak

8 Day Time,	each	$5.50
8 Day Strike,	"	6 50
8 Day Time, Calendar,	"	6.00
8 Day Strike, Calendar,	"	7 00

WEIGHT 8 LBS

12 Inch, Drop Octagon, Height 34 Inches, Dial 12 Inches,
Rosewood or Oak

8 Day Time,	each	$5.75
8 Day Strike,	"	6 75
8 Day Time, Calendar,	"	6 25
8 Day Strike, Calendar,	"	7 25

WEIGHT [illegible] LBS.

ONE IN A CASE WEIGHS [illegible] PACKING WEIGHT

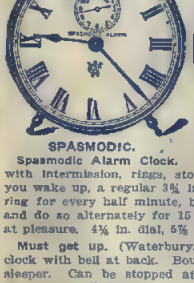
High Grade Alarm Clocks and Specialty Clocks

Alert Nickel Alarm Clock. (Waterbury) 1 day time, 4 in. dial, 5⅛ in. high, an extra loud bell at back, 3¼ in. finely nickel case with second hand and alarm indicator, guaranteed, high grade new clock at low price. Each ..... .75

NEW ALTERNATING CLOCK

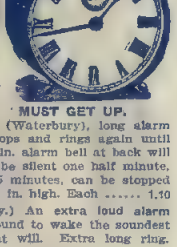
Alternating Alarm Clock. 4½ in. nickel plated case, rings for 25 seconds, every 20 seconds for 15 minutes, shut off lever, 38 hour movement .... .80

Tatto (New Haven). A high grade clock in every respect. Guaranteed One that is hard to surpass in finish and quality and other points, making the clock especially desirable. Extra long intermittent alarm. Bell at back, with check lever. Each 1.10



SPASMODIC.

Spasmodic Alarm Clock. (Waterbury), long alarm with intermission, rings, stops and rings again until you wake up, a regular 3¾ in. alarm bell at back will ring for every half minute, be silent one half minute, and do so alternately for 15 minutes, can be stopped at pleasure. 4¼ in. dial, 5⅝ in. high. Each 1.10



MUST GET UP.

Must get up. (Waterbury.) An extra loud alarm clock with bell at back. Bound to wake the soundest sleeper. Can be stopped at will. Extra long ring. Embodying all durable features. Each 1.05

NOVELTY MUSICAL CLOCKS

Plays Two Popular Airs.

No. 44. Novelty Musical Clock, with visible works, solid Nickel case, high mirror polish, heavy glass front and glass sides, extension base, handle on top, fine time keeper, size 6x4x3, white dial, second hand. Plays two popular airs for several minutes, sets same as ordinary alarm. Luminous front. Exceptionally handsome. Each 2.25

SPECIALTY CLOCKS.

Mission.

1620

Mission Clock. Very Quaint yet neat, made of weathered oak, strongly constructed with brass hands and numbers. Each size in three good models. These are in great demand for premium purposes. It is something of a novelty now, guaranteed goods.

No. 210—12 in. high, 3 styles, each 1.35
No. 215—20 in. high, 3 styles, each 2.50

No. 1620 Miniature clock. Made in same style as the cuckoo clocks, about 7-in. high, 2½-in. dial, carved and ornamented case of walnut wood natural finish, winds by weight, has good brass works and is as good as anything in the imported clock line, a very fine article for premium purposes. Each ..... .38

No. 784. Traveling Clock (New Haven). Seal grain leather, 3¼x3 in., back closes with button clasp, leather handle, 3 in. dial, bevel glass. Assorted colors. Each 1.60

Traveling Clock. Made by W. C. Co. full leather encased with flap back. Each 1.15

IMPORTED NOVELTY CLOCKS

Beautiful showy time pieces for Jewelers, General Stores or Premiums.

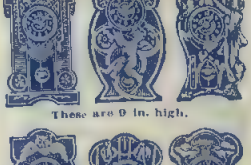
Dumb Show Alarm Clocks.

No. 85. Comedy Alarm Clocks. American pattern, nickel case new shape, alarm bell on top with check lever, alarm can be stopped at will, Roman dial, gilt reflector; come assorted in 6 kinds of pantomine figures representing **cooper shop, baby in cradle and nurse, hobby horse, blacksmith shop, butchers and Alp climbers.** These various figures are all finished in bright colors and are so constructed that they move systematically with the working of the clock, for instance: The nurse rocking the cradle; butcher, cutting meat; blacksmith, forging, etc. A beautiful scene is painted on the dial to correspond with the various figures and surroundings all finished in true colors; in itself every clock is a very interesting novelty and without question will find a ready sale everywhere, they also make good show pieces for windows. The scenes are as natural as can possibly be enacted with pantomine figures; dials 4-in., height 6-in.; packed 6 assorted, one of each kind
Per case. 6.75

Head Light Clock.

No. 6842. Our New "Head Light" Clock. Complete with chain for hanging on the wall, diameter across dial 10-in., frame is of sheet metal, bronzed black with polished nickel hand, projecting bull's eye glass dial on which the figures are painted, the actual dial under the glass is a beautiful picture of forest scene executed in colors, nickel flower shaped hands, key wind with regulator and hand setter in back, gilted reflector; an entirely new style and one for which we predict immense sales; good timekeeper and a large and beautiful showy time-piece. Each..... 1.45

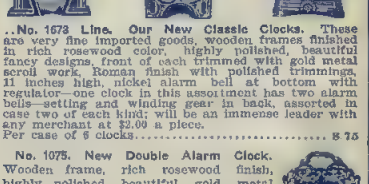
New Art Clocks, Assorted Styles



These are 9 in. high.

No. 400 Line. New Art Clocks. This is a line of goods which in appearance outrivals anything found in the market at the price; frame is 9-in. high, front part is fiber board in beautiful design, solid colors assorted shades, green, brown, buff and other shades back part is wooden frame fitted with good brass movement, long pendulum, key wind in dial, the designs are all deeply embossed and stand out in high relief, every one is a piece of art. Packed assorted four plain solid colors and two styles with an extra design painted in contrasting colors, namely flowers and other trimmings finished in such shades as they would naturally appear; assortment consists of six styles, one of each, no two alike; this ought to be an exceptionally fine clock for premium purposes.
Per assortment, six clocks... 3.50

No. 80. New Art Clocks. This is a miniature hanging clock and winds with weights on the same style as the cuckoo clock; it is made of the same material as our 400 Line. Front is fiber board embossed in beautiful designs, solid colors assorted shades in an assortment. Two styles in each assortment of six have hand painted fronts, that is the embossings are touched up in high colors, fitted with good brass movements; in short a very sightly and ornamental clock that will find a ready sale, dials are embossed with painted figures, white composition bands, packed assorted six styles, one of each, no two alike, four plain solid colors and two painted.
Assortment 6 clocks..... 2.50



..No. 1673 Line. Our New Classic Clocks. These are very fine imported goods, wooden frames finished in rich rosewood color, highly polished, beautiful fancy designs, front of each trimmed with gold metal scroll work, Roman finish with polished trimmings, 11 inches high, nickel alarm bell at bottom with regulator—one clock in this assortment has two alarm bells—setting and winding gear in back, assorted in case two of each kind; will be an immense leader with any merchant at $2.09 a piece.
Per case of 6 clocks..... 8.75

No. 1075. New Double Alarm Clock. Wooden frame, rich rosewood finish, highly polished, beautiful gold metal scroll trimming on front, fancy design, double bell alarm on top with wire handle, regulator and winding gears in back, bells are highly polished brass, Roman dial, fancy blue steel hands; it is a beautiful ornament and a fine time keeper, one that will find a ready sale on every counter.
Each 1.48

WATERBURY CLOCK CO.'S FINE REGULATORS.

PRICES EACH.

SPRINGFIELD.
Oak
8-inch dial, height 39⅝ inches, width 16¾ inches.

No. 6071 8-day, spring, time $10 70
No. 6072 8-day, spring, ½-hour strike, gong 12 70
No. 6073 8-day, spring, time, calendar 11 35
No. 6074 8-day, spring, ½-hour strike, gong, calendar 13 35

NATCHEZ.
Oak or oak finish.
8-inch dial, height 44 ½ inches, width 13¾ inches.

No. 6075 8-day, spring, time $12 00
No. 6076 8-day, spring, ½-hour strike, gong 14 00

GALESBURG.
Oak, walnut or mahogany.
8-inch dial, height 52 inches, width 14¾ inches.

No. 6077 8-day, spring, time $14 65
No. 6078 8-day, spring, ½-hour strike, gong 16 65

NASSAU.
Oak
10-inch dial, height 45 inches, width 13½ inches.

No. 6079 8-day, spring, ½-hour strike, gong $15 35
No. 6080 30 day, spring, time, with second hand 15 35

GUARANTEED ACCURATE TIMEKEEPERS.

POSTORIA
Oak, walnut or mahogany.
12-inch dial, height 45⅝ inches, width 16¾ inches.

No. 6081 8-day, spring, time $16 65
No. 6082 8-day, spring, ½-hour strike, gong 18 70
No. 6083 8-day, spring, time, with second hand 18 70

POSTAL.
Oak.
13-inch dial.

Height 68⅝ inches, width 18¾ inches.
No. 6084 8-day, time $20 00
No. 6085 8-day, ½-hour strike, gong 22 00

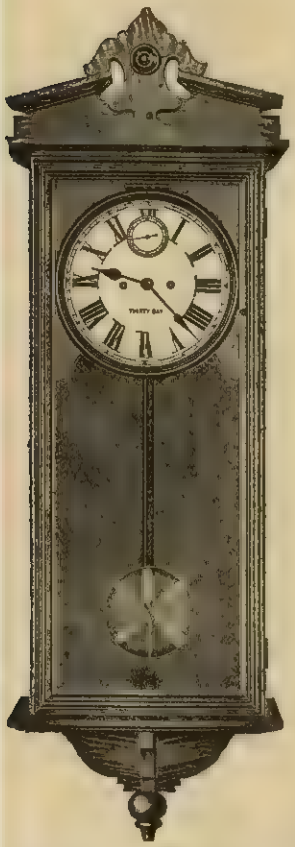
REGULATOR No. 20.
Oak.
8-day, weight, time,
Dead-beat escapement, retaining power, solid pendulum movement frames, 12-inch dial. Height 38 inches
No. 6086 Each $26 35

REGULATOR No. 67
Oak, walnut or mahogany.
8-day, weight, time,
Dead-beat escapement, retaining power, solid pendulum movement frames, 13½-inch dial.
Height 50 inches, width 22 inches.
No. 6087 Each $29 35

The above prices are subject to the regular discount.

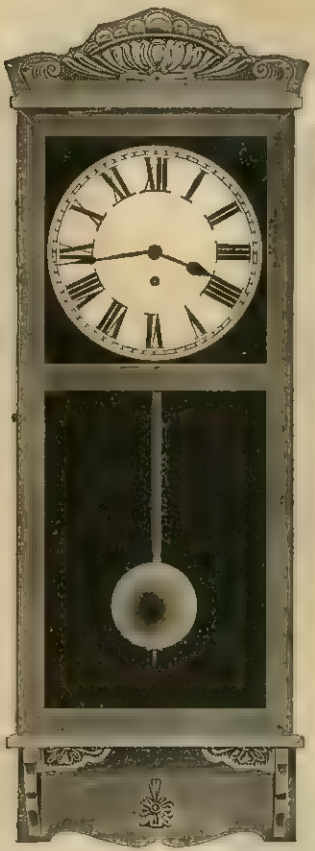
New Haven Clock Co.'s Fine Regulators and Hall Clocks.

Prices Each.



VAMOOSE—Oak
Height 45 inches. Width 15¼ inches, dial 10 inches.

No. 6057	Eight-day, time	$15 00
No. 6058	Eight-day, strike, gong	17 00
No. 6059	Eight-day, time, calendar	18 70
No. 6060	Eight-day, gong, calendar	17 70



TAMPICO—Oak.
Height 43 inches, width 15½ inches, dial 12 inches.

No. 6061	Eight-day, time	$11 55
No. 6062	Thirty-day, time	14 20

TROJAN—Oak.
Height 44 inches, width 13½ inches, dial 8 inches.

No. 6063	Eight-day, time	$16 50
No. 6064	Eight-day, strike, gong	18 00
No. 6065	Eight-day, time, calendar	18 70
No. 6066	Eight-day, gong, calendar	18 70

Guaranteed Accurate Timekeepers.

AUSTRIAN—Oak or Cherry.
(Showing thirty-day calendar fitting.)
Height 45¾ inches, width 18 inches, dial 10 inches.

No. 6067	Eight-day, time, calendar	$23 00
No. 6068	Eight-day, gong, calendar	25 00
No. 6069	Thirty-day, time, calendar	25 70
No. 6070	Eight-day, time, weight movement	27 00

The above prices are subject to the regular discount.

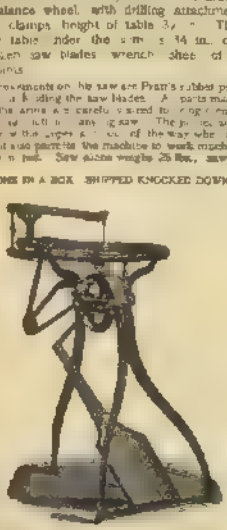
WOOD-WORKING MACHINERY.

SCROLL SAWS.

No. 1 New Rockers, japanned iron frame, striped in red and gold, japanned tilting table as recited as, arms and pitman steel arbors carefully fitted to bearings 4¾ in. from balance wheel, with drilling attachment. Improved saw clamps, height of table 3 ft. The swing around the table under the arm is 24 in., complete with one dozen saw blades, wrench, sheet of designs and directions, each $3 50

The latest improvements on this saw are Pratt's rubber positive dust blower and new clamps for holding the saw blades. All parts made to interchange. The bearings of the arms are carefully scraped to a perfect fit, like a watch, so that they run with the least possible friction, and all wear can be taken up. The pitman arm is so adjusted that the operator's hand is out of the way when using the longest saw. This joint also permits the machine to work much more freely than when a straight arm is used. Saw alone weighs 25 lbs., saw and box together 42 lbs.

ONE IN A BOX. SHIPPED KNOCKED DOWN.



No. 7 Cast iron frame and marble table and arms, balance wheel run on steel arbor 2 in. blade, complete with dozen saw blades, each $15 00

For carpenters and builders, cabinet makers and other wood workers. With saw, 2 in. stroke, 400 strokes per minute, 4½ per minute, self-oiling, reversible speed when sawing, 1,800 to 2,000 strokes per minute, capable of such work as small hard maple and cherry saw to be used and can be taken out and replaced in an instant, for ripping work. The swing around the blade under the arm is 24 in. Weight 55 lbs. Boxed ready for shipment 60 lbs.

VELOCIPEDE SCROLL SAWS.

No. 2 Cast iron frame, hard maple table and arms, with 1 dozen blades (without attachment), each $15 00

No. 28 With boring attachment, including one ¼ in. bit, each, 20.00

The swing around the blade under the arm is 24 in. The saw we ship 30 lbs. boxed ready for shipment. 50 lbs. The boring attachment can be furnished at any future time if not desired when ordering the machine. We can furnish extra bits as the following prices, each: ⅛ in. 15c., ¼ in. 15c., ⅜ in. 20c., ½ in. 20c., ⅝ in. 25c., ¾ in. 30c., ⅞ in. 35c.

COMBINED CIRCULAR AND SCROLL SAWS.

No. 25—Circular Saw only (with two 6 in. saws), without attachments, each $35 00

No. 26—Scroll Saw Attachment (1 dozen saws), extra, " 5 00

No. 27—Boring Attachment, with drill chuck, extra, " 10.00

No. 30—Combined Machine, complete with attachments, " 50.00

Combines a circular and scroll saw, the circular saw being the machine proper with the scroll saw as an attachment. Either the circular or the scroll saw is interchangeable, the height of degree of each operation being readily adjusted. The scroll saw frame swings on the circular frame, being readily adjusted and secured by a cam, to any desired degree of inclination, thus enabling the saws to cut bevels. The circular saws are 6 in. in diameter and reach 2½ in. above the table. Weight boxed ready for shipment, 450 lbs.

EXTRA QUALITY SILVER AND NICKEL PLATED CALL BELLS.

Hand, Electric, Rotary and Push Bells.

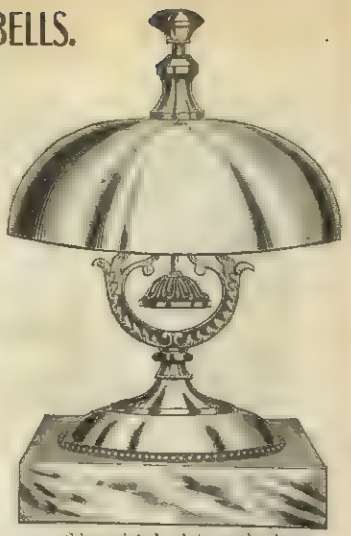
Illustrations are about one-half size.

PRICES EACH.

Silver plated, white marble base.
No. 4079 Each..... .$2 15

Nickel plated, bronze base.
No. 4080 Each.. .. $1 35

Nickel plated, bronze base.
No. 4081 Each... .... $1 55



Silver plated, white marble base.
No. 4082 Extra large, hotel size... $7 20
No. 4083 Same style, hotel medium 4 80

Silver plated, gold base.
No. 4084 Each.....$1 35

Electric strike, all silver plated.
No. 4085 Each $2 90

Electric strike, silver plated bell, gold base.
No 4086 Each.....$3 25

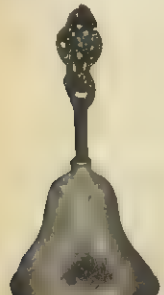
Gilt bell, bronze base.
No. 4087 Each... .....85c

Nickel plated.
No. 4088 Each.....$2 60

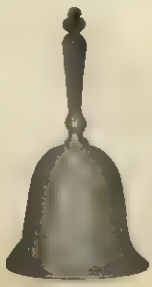
Silver plated.
No. 4089 Each.....$5 00

Nickel plated, bronze base.
No. 4090 Each.....85c

Nickel plated, bronze base.
No. 4091 Each..... .90c



Silver plated.
No. 4092 Each..... $2 90



Silver plated.
No 4093 Each.....$1 00

Silver plated.
No. 4094 Each.....$2 20

Silver plated.
No. 4095 Each.....90c

Silver plated
No. 4096 Each $2 20

The above prices are subject to the regular discount.

GERMAN ACCORDEONS — Best Selling Styles

No. 3. Accordeon, imitation rosewood, polished wood, key cover, 10 German silver keys, 2 basses, one stop, one set of reeds with cornice and tops, mahogany finish, nickle corners and clasps, 11x5 inches. Each ..... .75

No. 6. Accordeon, imitation rosewood, polished wood key cover 10 German silver keys, two basses, one stop, one set of reeds, with cornice and tops, mahogany finish, nickle corners and clasp, 11x5 inches. Each 1.10

No. 8. Accordeon, nickel and polished wood key cover, black molding, imitation rosewood top, patent leather covered folds, 10 German silver keys, 2 basses, 2 stops, 2 sets of reeds, 12x6 inches. Each 1.30

No. 9. Accordeon, open nickel action, rich walnut molding and tops, double bellows, 10 keys, 2 basses, 2 stops, 2 sets of reeds, 10¼x5½ inches. Each 1.35

No. 10. Accordeon, open nickel action, double bellows with nickel corners, and nickel bellows portector, 8 patent leather covered folds, 10 German silver keys, 2 basses, 3 stops, 3 sets of reeds, black colored molding and tops, 10¼x 5½ in. Each 1.65

No. 12. Accordeon, open nickel action, double bellows with nickel corners and bellows protectors, 8 patent leather covered folds, 10 German silver keys, 2 basses, 3 stops, 2 sets of reeds, mahogany molding and tops, 12x6 in. Each..1.85

No 21. Accordeon, open nickel action, 12 tones colored trumpets, nickel corners and clasp, double bellows with nickel bellows protectors, 10 keys, 2 basses, 2 stops, 2 sets of reeds dark red polished top and red bellows covering, black polished molding, 12x6 inches. Each 1.85

No. 15. Accordeon, open nickel action, double bellows, 10 patent round nickel keys, 2 basses, 2 stops, 2 sets of reeds, imitation cherry molding, fancy gilt ornamented tops, nickel trimmings and clasps, 12x6 inches Each..... 1.85

No. 39. Accordeon, open nickel action, nickel rim and nickel corners and clasps triple bellows protectors, 10 keys, 2 basses, 2 stops, 2 sets of reeds, very handsome mahogany moulding and tops, 12x6 in., a good tone, nice appearing, large size accordeon. Each..... 2.25

No. 47. Accordeon, open nickel action with nickel border double bellows with nickel corners and holders, patent leather covered folds, 10 German silver keys, 2 basses, 2 stops, 2 sets of reeds, oak polished tops and rounded molding with nickel bands, 10¼x5½ inches Each 2.15

No. 316. Triumph Accordeon, with an entirely new and superior reed system, ebonized polished tops and molding with silver brass ornaments, open nickel action, double bellows heavy cloth folds with nickel corners and trimmings, 10 keys, 2 basses, 2 stops 1 bellows stop, 1 set of Triumph reeds, mahogany frame, 10½x5 in. Each 1.90

No. 50. Accordeon, open nickel action and nickel borders double bellows, nickel bellows protectors and patent leather covered folds, 10 German silver keys, 2 basses, 3 stops, 3 sets of reeds, black molding, blue tops, 11x5 in Each 2.75

No. 318. Triumph Accordeon, ebonized tops and molding, silver brass ornaments, open nickel action double bellows, leatherette folds, with nickel corners and trimmings, 10 sets of keys, 2 basses, 2 stops, 1 bellow stop, 1 voxhumana stop, 3 sets of Triumph reeds, 10½x5 inches. Each 3.00

No. 61. Accordeon, open nickel action, double bellows, engraved nickel corners and clasps nickel bellows protectors, 19 nickel keys in 2 rows, 4 basses, 4 stops, 4 set of reeds, black molding and tops, metal ornaments on top, 11½x6½. Each 2.65

STANDARD MAKE BANJOS

This well liked instrument is in great favor everywhere. We have selected a few numbers for our catalog of such goods as are highly recommended by the manufacturer for their good playing qualities and their general construction and nice appearance; every instrument is guaranteed as represented.

No. 696

No. 702

BANJOS.

No. 654. Banjo. 7 inch calf skin head, nickel covered rim, brass hoop, 6 brass brackets, imitation walnut neck and head, ebony finished pegs and tailpiece. Each 1.00

No. 672. Banjo. 11 inch sheep skin head, maple rim, brass hoop, 6 brass brackets, imitation walnut neck, ebony finished pegs and tailpiece. Each 1.20

No. 678. Banjo. 11 inch calf skin head, maple rim, brass hoop, 12 brass brackets, imitation walnut neck, ebony finished pegs and tailpiece. Each 1.75

No. 696. Cincy Banjo. 11 inch calf skin head, nickel covered rim, nickel hoop, 12 nickel ball brackets, walnut neck, German silver raised frets, black pegs and pretty nickel tailpiece. Each...2.00

No. 662. Banjo. 8 inch calf skin head, nickel covered rim and hoop, 10 brass brackets with safety nuts raised metal frets, walnut polished neck, ebony finished pegs and tailpiece Each 2.15

No. 680. Banjo. 11 inch calf skin head, imitation walnut rim, nickel hoop, 30 nickel ball brackets, nickel band around center of rim, imitation walnut neck, ebony trimmings, German silver frets. Each.....2.50

No. 702. Cincy Banjo. 11 inch calf skin head, nickel covered rim, nickel hoop, 1 wired edge, 24 nickel ball brackets cherry polished neck, imitation ebony finger board with German silver frets and pearl and German silver ornaments, silver pegs. Each.4.55

BANJO CASES.

No. 884. Banjo Case. Open at end; 12 inch to fit 12 inch; canvas, with leather binding, fleece lined, with buckles and straps, superior quality, patent handle. Each.....85

No. 881. Banjo Case. 13 in. to fit 12 in.; Keratol or leather cloth, end opening, fleece lined with buckles and straps, sewed flat leather handle; a nice looking case. Each.1.90

CONCERT FLUTES—STANDARD GOODS.

Genuine Grenadilla Wood, with cork joints; each in pasteboard box; not warranted against checking or cracking; exceptionally well made goods; a superior quality at these low prices.

No. 1706. Flute. German silver keys, German silver rings and tuning slide. Each 1.50

No. 1712. Flute. 4 German silver keys, rings, caps and tuning slide; cork joints. Each 2.60

No. 1714. Flute. 6 German silver keys, rings, caps and tuning slide, cork joints. Each 2.85

No. 1715. Flute. 8 German silver keys, rings, caps and tuning slide, cork joints. Each 3.85

No. 1720. Flute. 8 German silver keys, rings, caps and tuning slide, cork joints, with German silver embouchure. Each 4.20

VIOLINBOWS—GOOD LOW PRICE GOODS.

VIOLIN BOWS.

No. 5093. Violin Bow. Full length, dark red polished imitation ebony frog with pearl dot, bone button and tip; good cheap bow. Dozen.....2.00

No. 5098. Violin Bow. Fine imitation snakewood, ebony frog, pearl dot and pearl slide, German silver button, well haired, wrapped hand part. Doz.....3.75

No. 5104. Violin Bow. Genuine Brazil wood, ebony frog, with pearl dot and pearl slide, bone button, full haired, hand part in leather wrapping. Doz.....5.00

VIOLIN TAILPIECES.

No. 5014. Violin Tailpiece. Made of select hardwood, imitation ebony inlaid pearl dot. Dozen ..... .40

No. 5015. Violin Tailpiece. Made of select hardwood, imitation ebony, inlaid pearl diamond and dot. Dozen.....55

No. 5022. Violin Tailpiece. Fine quality select hardwood, imitation jet black ebony fine finish, inlaid fine pearl flowers and lined string holes. Dozen.....2.15

Two Special Clocks

CHINA CLOCK. BLACK ALARM.

GOOD STAPLE SELLERS.

China Clocks. Assorted four styles all neat shapes and new designs. Fine glazed porcelain china with raised ornaments decorated by hand in colors; 2 in. ivory dial and bevel glass. 5¼ in. high.
Each ..... .80

F. W. Alarm Clocks. A long loud ring. Gun metal black finish. White dial. Nickle plated back. 5 in. high. Cast iron case. Each ..... .90

CLOCKS FOR PREMIUMS.

These are handsome large showy goods nicely finished—guaranteed timekeepers.

Champion "Premium" Clock. Large, showy, flashy frame, very fancy design, bright gilt finish. Especially desirable for "premium" purposes. Good, staple reliable article. Every premium house handles this. Dial 3 in., 9 in. high. Each ..... .65

No. 173. Our Imperial Special Gold plated clock is the richest design offered for this season, a rich combination of scroll and fancy pattern, bronze frame, highly polished and gold plated, good movement, fancy celluloid dial, gilt reflector, heavy bevel glass, one of the best values we ever had for either merchants or premium purposes, for the latter it is especially adapted .85
Per 100 ..... 80.00

A HANDSOME NEW CLOCK.

As a premium article it hits the spot just right.

Cupid Clock. This is a beautiful artistic design, pottery repro. satin American Shield, stars, stripes and winged Cupid on top holding flags and floral scroll on side, fitted with good American movement, fancy dial, 8-in. high 7-in. wide, this design will appear to all of artistic taste, it is really very handsome and will sell for a price that offers good profit; premium givers will find this an excellent article for their use.

No. 50. Ebony finish.
Each ..... .68

No. 55. Gold bronze finish.
Each ..... .72

Ormolu Gold Plated Clocks

Ben Claire

Aire

Ben Claire (New Haven). Ormolu gold plated clock, beautiful, antique scroll pattern with three cupids 5⅜ in. high 4 ¾ in wide 2 in dial. One day time Each 1.05

Aire (New Haven). Ormolu gold plated clock, very elaborate design with three festive maidens at top and art figure at the base 6 in high, 5 in wide. One day time. Each 1.05

Bucknell.

Lisbon

Bucknell (New Haven) Ormolu gold plated clock 6 in. high 6½ in wide with 3-in dial One day time. Handsome leaf and ribbon design, beautifully finished. Each 1.05

Lisbon (New Haven). Ormolu gold plated clock 6 in. high, 6⅛ in wide, with 2 in. dial; one day time; handsome leaf and ribbon design, beautifully finished. Each 1.35

Savoy.

Nana.

Savoy. Our leading number in good clock line. Ormolu gold plated and burnished, bevel glass. 2 in. dial, ivory finish. 7⅜ in. high. A big premium article. Good timekeeper. 1 day time. Each 1.30

Nana. (New Haven). Fine staple design with handle. Square shape. 5⅛ in. high, 3½ in. wide, 2 in. dial, ivorized porcelain finish. Ormolu gold plated and burnished. Very staple 1 day time. Each 1.90

HIGH-GRADE ORMOLU Gold Plated CLOCKS

Fully Guaranteed for Lasting and Time Keeping Quality.
Beautiful Ornamental Designs. Will Not Tarnish.

Sylph.

Eldora.

Venice.

Trianon.

Sylph Clock. Ormolu gold plated; 8 in. high; ivory finish; dial 2 in. with bevel glass. Clock on a pillar held by a cupid. Both on a footed base. Very good design; 1 day time. Each..... 2.00

Eldora Clock (New Haven). A large cupid figure holding a streaming ribbon scroll from which suspends a clock. The entire design is of a handsome appearance; fastened on a footed base. Ormolu gold plated and burnished. One day-time; 2 in. dial; 6¾ in. high; 4¾ in. wide. This design is ever a ready ready selling one. Guaranteed. Each 2.25

Venice Clock, 2 cupids holding a clock; in a shell design case. All on a footed base. Ormolu gold plated and burnished, 9¾ in. high; ivory dial, 2 in. Bevel glass, 1 day-time. Each 2.85

Trianon (New Haven). French satin gold finish; very rich; 7½ in high; 3¾ in. wide; 1 day-time; 2 in. ivorized porcelain dial; highly burnished; an artistic design; very staple; guaranteed. Each.. 2.00

THE SASH OF "BELLONA" IS SET WITH RUBIES, SAPPHIRES AND WHITE STONE DIAMONDS.

Bellona.

Minot.

Chariot.

Bellona (New Haven). 9¾ in high, 6½ in. wide; bevel glass; 2 in dial. Fitted with jeweled sash set with brilliants, rubies, sapphires and other stones. Very attractive and flashy clock. Two cupids on a footed base. Ormolu gold plated and burnished. 1 day time; guaranteed. One of the fanciest in the line. Each..... 3.60

Minot. (New Haven.) A decidedly neat pattern of clock on a high pillar held by female figure All on a footed base. Ormolu gold plated. A design that is appreciated and an easy seller. 9¾ in. high. 6¾ in. wide. Very rich. 1-day time. Guaranteed.

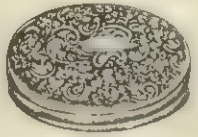
Each 3.40

Chariot. (New Haven.) Clock mounted on two wheel rig drawn by doves. Guided by Cupid seated on top. Richly finished and plated in ormula gold. That it is neat and very desirable for mantels, or ornamental purposes goes without saying. 9¼ in. high, 8¼ in. wide. Guaranteed time keeper. 1 day time. Each 4.90

FINE STERLING SILVER NOVELTIES.

CUTS ARE EXACT SIZE. PRICES EACH.

JAR FOR TOOTH BRUSH.
Jar for tooth brush, sterling silver top, glass bottle.
No. 8195 Each 85c



TOP

TOOTH POWDER JAR.
Tooth powder jar, sterling silver top, cut glass effect bottle, gilt shaker.
No. 8196 Each 85c

SOAP BOX.
Sterling silver, extra heavy, raised ornaments, cel[illegible] lining.
No. 8197 Each $4 60

BLOTTER.
Sterling silver, raised [illegible] ornaments, [illegible] enameled black wood handle.
No. 8198 Each. $1 50

All goods guaranteed as represented.

CORKSCREW.
Polished horn handle with sterling silver [illegible]
No. 8200 Each $2 85

INK BOTTLE.
Sterling silver top, French gray finish.

All orders filled same day received. No delay.

INK BOTTLE.
Sterling silver top, cut glass bottle.
No. 8201 Each..... $1 15

FINE PUFF AND SALVE JARS

PRICES EACH.

No. 8184 Salve Jar 55c
Cut glass effect, raised plate cover, Roman finish. (Cut full size.)

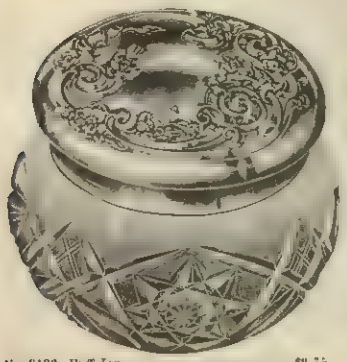
No. 8185 Puff Jar $1 05
Cut glass effect, Roman finish, gold plated top, height 3 inches, diameter 4 inches.

No. 8186 Hair Receiver..... $1 50
Roman finish, gold plated top, cut glass effect jar, height 3½ inches, diameter 5 inches.

No 8187 Salve Jar $1 65
Cut glass effect, sterling silver top.
(Cut full size.)

No 8188 Puff Jar $2 20
Cut glass effect, sterling silver top, French gray finish, raised ornaments, height 3 in., diameter 4 in.

No. 8189 Puff Jar. $4 15
Cut glass jar, heavy sterling silver top, French gray finish, height 3½ inches, diameter of top 3 inches.



No. 8190 Puff Jar $0 75
Cut glass effect, sterling silver top French gray finish, height 3⅜ inches, diameter of top 2⅝ inches.

No. 8191 Puff Jar $0 75
Cut glass jar, heavy sterling silver top, French gray finish, height 3¼ inches, diameter of top 3¼ inches.

No. 8192 Salve Jar..... 40c
Cut glass effect, Roman finish, gold plated top, height 2¾ inches, diameter 2½ inches.

8193 Salve Jar $1 45
Cut glass effect, sterling silver top, French gray finish

8194 Salve Jar 40c
Cut glass effect, silver plated white metal top, height 1¾ inches, width of top 2¼ inches.
(Cut reduced size.)

ALL ORDERS FILLED SAME DAY RECEIVED. NO DELAY.

The above prices are subject to the

LADIES' HAND BAGS - Very Fine Genuine Leather Goods

7489

7488

7490

7491

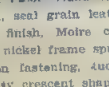
No. 7489. Bag, genuine seal grain leather, dull finish, superior quality, 5¾x8¼ in., heavy piped seam, gusset ends, gilt square frame with brass push-off lock, flat sewed leather handle, gilt Vienna tips, tan leather lined with large pocket holding a capacious coin purse to match, one of our uncommon values.
Each 1.00

No. 7488. Hand Bag, genuine leather, superior quality, fine seal grain, extended gusset ends, heavy piped seam, 5¾x9½ in., rigid square gilt frame, push-off brass lock, flat sewed leather handle, gilt Vienna tips, water silk lined with 3 pockets containing coin purse, embossed gilt frame mirror and imitation cut glass smelling salts bottle; an extraordinary fine value.
Each 1.15

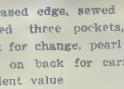
No. 7490. Hand Bag, club shape, genuine heavy seal grain leather, dull finish, 6½x9½ in., select quality, heavy piped seam, gusset ends, leather covered, square steel frame, gun metal patent lock with loose ring for opening, flat sewed leather handle, Vienna tips, fine tan leather lining, one pocket holding a leather coin purse to match, exceptional value.
Each 1.25

No. 7491. Hand Bag, superior quality, genuine leather seal grain, heavy soft and pliable club shape, 5⅞x11½ in., flush gusset ends, piped seam, square steel frame leather covered, brass rivets, brass push-off lock flat sewed leather handle, gilt Vienna tips, fine quality tan leather lining, large pocket inside holding capacious coin purse to match; as fine in quality, appearance and general construction as any bag that sells for $5.00 over the counter.
Each 1.75

TWO SPECIAL HAND WALLET BAGS.



7485.



7343

No. 7485. Hand Wallet and Purse, genuine luster finish, seal grain leather, creased edge, sewed turn-over finish, Moire cloth lined three pockets, one with nickel frame spring lock for change, pearl snap button fastening, duck strap on back for carrying, novelty crescent shape, excellent value
Dozen 4.00

No. 7343. Envelope Hand Bag, 3½x6¼ in., black luster finish, Pantasote leather, black canvas lined when folded it looks like an envelope, fastens with enameled glove button, one nickel frame coin pocket, two card pockets inside, strap at back for carrying
Dozen 2.10

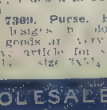
TEDDY BEAR HAND BAGS

New and Very Popular Article.

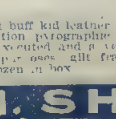
Pyrographic or burnt design of the famous Teddy Bears on side genuine brown and tan leather, size about 4x4 in. scroll shape metal frame, two ball clasp, nickel tips, round handle; the most successful fad seller of the season.

No. 7492.
Dozen 2.40

PURSES AND HAND BAGS WITH BURNT DESIGNS - POPULAR PYROGRAPHIC ART GOODS



7308

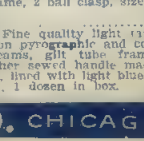


7309.

No. 7308. Purse. Light buff kid leather, one side decorated on metal stamped designs of various subjects, ht. Japanese pictures, Holland scenes etc. trimmed in cords, imitation pyrographic work, gilt tubular frame, 2 ball clasp, saddle stitched, size 2x2½ in., 1 dozen in box
Dozen ..... .75

No. 7309. Purse. Fine light buff kid leather metal scene designs in colors imitation pyrographic work, these goods are very much decorated and a very attractive article for several purposes, gilt frame, 2 ball clasp, size 3¾x4¼ in., 1 dozen in box
Dozen 1.20

7412.



7413

No. 7412. Purse, with Chain. Light kid leather, saddle stitched seams, decorated on one side with pictures in colors imitation pyrographic work, highly polished, fancy gilt tube frame, 2 ball clasp, size 2½x3 in., 1 dozen in box.
Dozen 1.10

No. 7413. Hand Bag. Fine quality light tan kid leather, with fancy imitation pyrographic and colored pictures, saddle sewed seams, gilt tube frame, 2 ball snap flat divider, silk sewed handle made of same material as bag itself, lined with light blue silk-line cloth, size 3¼x4½ in., 1 dozen in box.
Dozen 2.90

LADIES' HAND BAGS - Latest Up-to-Date Goods

7400.

7401

No. 7400. Small Hand Bag, size 5x3 in., luster finish, black Pantasote imitation of walrus leather beaded nickel frame, two ball clasp sewed covered steel handle, nickel tips and rings, black canvas lined; the best 10c value ever offered in this line
Dozen ..... .85

No. 7401. Hand Bag, 7½x7 in., Pantasote leather, embossed imitation basket weave pattern, in shaded brown and gray, illuminated effect, gilt tubular frame, two ball clasp, form covered handle Vienna tips gusset ends crepe cloth lining excellent 25c seller.
Dozen 2.00

7439

7438.

No. 7439. Hand Bag, 7½x4½ ... Pantasote embossed alligator pattern, looks like genuine goods brown color, gilt tubular frame, two ball clasp frame, sewed covered handle, Vienna tips, gusset ends brown linen lining, dashy rich looking
Dozen 2 00

No. 7438. Hand Bag, luster finish black Pantasote embossed imitation walrus leather, with a raised pattern of snap and buckle on one side, 8½x3 in., gilt tubular frame, two ball clasp covered sewed form handle Vienna tips imitation water silk lining, excellent value
Dozen 2 05

7402

7412.

No. 7402 Hand Bag, 7x5¼ in luster black Pantatose leather, embossed imitation walrus, form covered sewed round handle, Vienna tips, tubular gilt frame, two ball clasp, black canvas lined, piped seam, gusset ends
Dozen 2 25

No. 7412 Hand Bag, luster finish black Pantatose leather, embossed imitation walrus, size 7½x4½ in gusset ends square gun metal steel frame, two ball gilt clasp sewed covered wire handle, gilt tips, black canvas lined, nice looking strong bag
Dozen 2 25

7436

7437

No. 7436. Hand Bag, 6¾x9¾ in., fine quality black Piantasote imitation French seal, with fancy embossed raised pattern of ribbon band on each side, gusset ends, heavy piped seam, square gilt frame with push off lock, steel shape sewed covered handle, imitation leather lined with pocket containing a coin purse, an extraordinary big value.
Dozen 4.20

No. 7437. Hand Bag, genuine leather Russia seal, luster black finish, heavy piped seams, leather covered square steel frame, gilt rivets, gilt push-off lock steel shape leather covered handle gilt Vienna tips, water silk lined with pocket containing coin purse, oxford shape, 5x9½ in., biggest value ever offered in leather bags
Dozen 6.00

7436

7437

7446

7487

No. 7446. Hand Bag, genuine heavy leather finished French seal, club shape, heavy piped seam, gusset ends black leather covered square steel frame, brass push-off lock, shaped steel handle leather covered, gilt Vienna tips, leather lined with 3 pockets inside holding double card case, coin purse and an embossed gilt mirror, one of our most popular sellers, 6x9½ in
Dozen 9.00

No. 7487. Hand Bag, genuine leather, embossed French seal, bag shape 9¾x9 in heavy piped seam flash gusset ends, leather covered square steel frame push off gilt lock, sewed flat handle gilt Vienna tips tan imitation leather lined with pocket inside holding long coin purse good value popular shape
Dozen 9 00

FIRE EXTINGUISHERS.

H. S. B. & CO'S.

No. 10—Copper cylinder, height [illegible] diameter 7 in., capacity about 3 gals., brass screw top and gi[illegible] each $ 5.00

Very carefully made and well finished. The engine is used [illegible] everywhere. Its simplicity in the manner of mixing the [illegible] ingredients, which [illegible] and the operator should [illegible] and [illegible] all of which are [illegible] against the [illegible] The sulphuric acid is [illegible] with a cage attached to the screw cap. The [illegible] has a hose metal stopper which drops out when the extinguisher is turned over, allowing the acid to mix with water containing [illegible] pound of bi-carbonate of soda in solution, forming a mixture of carbonic acid gas and water. This gas in the extinguisher is fifty times stronger than water and heavier than air. Fire is supported by oxygen and cannot burn without it. The carbonic acid gas shuts off the supply of oxygen and immediately smothers the fire. The pressure caused by the formation of gas in the cylinder will throw a stream [illegible] distance.

In shipping, the sulphuric acid is removed from the bottle by a rubber stopper. This should be replaced with the wooden stopper inserted in place. The extinguisher can be used in winter with a little extra expense, as an ounce of oil of sulphuric acid and eight ounces [illegible] will be the charge for a year. When exposed to zero temperature add two pounds of salt to the solution. There is nothing to get out of order; no cocks or [illegible] to clog; always ready for use, and will last a lifetime.

HARDEN HAND GRENADE

No. 4

No. 7

No Corrosion, No Freezing, No Danger of Explosion.

No. 4—Small capacity, [illegible] weight per dozen 60 lbs. [illegible] per dozen $10.00

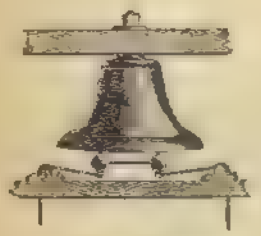
No. 7—Tubular capacity 1 qt., size 2½ [illegible] weight per dozen 85 lbs. [illegible] " 10.00

To extinguish a blaze throw the grenades as near the base of the fire as possible, in quick succession. In using the tubular pattern grasp the lower end of the grenade and [illegible] break off the top jet, under the [illegible] now be [illegible] the base of the flame vigorously.

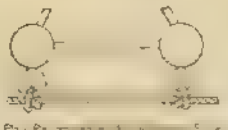
HALF OR ONE DOZEN IN A CASE. WE DO NOT BREAK CASES.

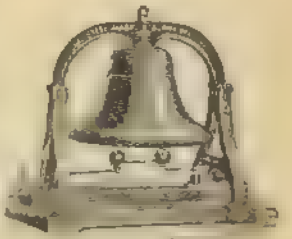
BELLS.

FIRE ALARM



Old Style. Nos. 130 to 154





New Style. Nos. 330 to 354

Old Style. Steel Alloy, Double Headed Clapper with Bolts and Rope Sheaves. Factory Shipment Only.

Nos	130	132	134	136	140	144	148	154
[illegible]	30	33	34	36	40	44	48	54
[illegible]	350	400	500	590	800	1190	[illegible]	[illegible]
[illegible]	400	450	550	645	896	1290	[illegible]	[illegible]
Each	$50.00	60.00	70.00	80.00	120.00	150.00	200.00	[illegible]

Improved, New Style, Steel Alloy, Double Headed Clapper, with Frame Complete. Factory Shipment Only.

Nos	330	332	334	336	340	344	348	354
[illegible]	30	33	34	36	40	44	48	54 in.
[illegible]	360	38	470	575	780	1150	360	[illegible] lbs.
[illegible] complete	555	605	730	865	90	1595	2000	[illegible] lbs.
Each	$70.00	80.00	95.00	115.00	155.00	205.00	260.00	[illegible]

WARRANTY. The manufacturers warrant these bells against breaking with ordinary use, for five years.

FARM.

Nos. 1, 2 and 3.

No. 4.

Steel Composition, Bronzed, Japanned Frame.

Nos	1	2	3	4	
[illegible]	15	17	19	21	[illegible]
[illegible]	40	50	75	100	lbs.
Each	$4.00	5.00	7.50	0.00	

[illegible] farm bell with [illegible] for platform or belfry. The [illegible] for bells are longer complete.

LOCOMOTIVE GONG.

Polished Bell Metal, Cocoa, Plain, Outside Trip Gong.

Inches	6	5	0
Wt. per doz.,	24	50	125 lbs.
Per dozen	$24.00	46.00	84.00

10 in. has tapering hammer.

[illegible]

PUNCHES.

CONDUCTORS'.

No. 22—Wrought steel, nickel plated, fancy holes, assorted, length [illegible] wt per doz 2 lbs. per dozen $5.00
HALF DOZEN IN A BOX.

No. 12—Polished with fancy holes, assorted, length 4½ in. wt per doz. 3½ lbs., per dozen $7.00
ONE DOZEN IN A BOX.

No. 38—Nickel plated, fancy holes, assorted, length 5¼ in., wt per doz. 4 lbs. per dozen $15.00
ONE DOZEN IN A BOX.

No. 44—Nickel plated, fancy holes, assorted, length 4 in., wt per doz. 5 lbs., per dozen $26.00
ONE IN A BOX.

MACHINISTS'.

No. 5 [illegible] in. steel, [illegible] per pound $0.55
length [illegible]
HALF DOZEN IN A BOX. WEIGHT 8 LB. PER DOZEN

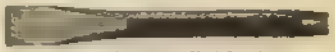
No. 10—½ in., octagon, cast steel, ⅜ in. point, length 7 in., per pound $0.40
HALF DOZEN IN A BOX. WEIGHT 4½ LBS. PER DOZEN

COLD CHISELS.

U. S. A., [illegible] Grade Octagon Tool Steel, Forge Finished.

No. [illegible] Inches,	¼	⅜	½	⅝	¾	⅞	1
Length, [illegible]	5½	5¾	6½	7	7½	7½	8 in.
Wt per doz. [illegible]	1	2½	4	7	11	15	20 lbs.
Per pound [illegible]	60	60	60	60	60	60	60

½ AND ¾ IN. PER DOZEN. BALANCE HALF DOZEN IN A BOX.



Octagon Cast Steel, Half Polished.

No. 4—Inches,	¼	⅜	½	⅝	¾	⅞	1
Length	5½	5¾	6½	7	7½	7½	8 in.
Wt per doz.	1¾	2¾	4¼	7	11	15	20 lbs.
Per pound,	$0.40	.38	.33	.31	.28	.27	28

¼ AND ½ IN. PER DOZEN. BALANCE HALF DOZEN IN A BOX.

SPRING PUNCHES.

No. 544—Cast steel, polished, assorted sizes from 3 to 9, length 7 per dozen $4.25
No. 30—Extra tubes, 1.40
ONE DOZEN IN A BOX. WEIGHT 6 LBS. PER DOZEN.

Revolving

No. 4—Cast steel, polished, with 4 tubes, sizes 4, 6, 8 and 10, length [illegible] in. per dozen $ 0.00
No. 30—Extra tubes, .40
HALF DOZEN IN A BOX. WEIGHT 9 LBS. PER DOZEN.

"REV-O-NOC" HATCHETS.

SHINGLING.

HALF.

Hand Made, Extra Tool Steel, Natural Finish, Polished Face and Bevel.

No. 1	Shingling 3½ in. bit, weight per dozen 20 lbs.	per dozen	$8.00
No. 2	Shingling 4 in. bit, weight per dozen 26 lbs.	"	8.50
No. 3	Shingling 4½ in. bit, weight per dozen 33 lbs.	"	9.00
No. 1½	Half, 3½ in. bit, weight per dozen 22½ lbs.	"	8.50
No. 2	Half, 3½ in. bit, weight per dozen 27 lbs.	"	9.00

HALF DOZEN IN A BOX. SIX DOZEN IN A CASE.

CLAW.

BROAD.

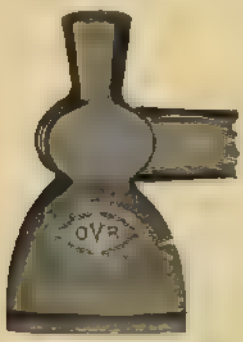
Hand Made, Extra Tool Steel, Natural Finish, Polished Face and Bevel.

No. 1	Claw, 3½ in. bit, weight per dozen 23 lbs.	per dozen	$ 9.00
No. 2	Claw, 4 in. bit, weight per dozen 26 lbs.	"	9.50
No. 3	Claw, 4½ in. bit, weight per dozen 33 lbs.	"	10.00
No. 2	Broad, 4½ in. bit, weight per dozen 31 lbs.	"	11.50
No. 3	Broad 5 in. bit, weight per dozen 34 lbs.	"	13.00
No. 4	Broad 5½ in. bit, weight per dozen 40 lbs.	"	14.50
No. 5	Broad 6 in. bit, weight per dozen 46 lbs.	"	16.50

HALF DOZEN IN A BOX. SIX DOZEN IN A CASE.

"OUR VERY BEST" HATCHETS.

SHINGLING.



HALF.

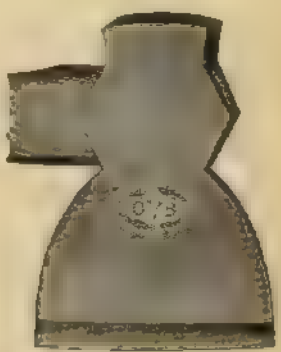
Cast Steel, Full Polished and Etched.

No. 801—Shingling, 3½ in. bit, weight per dozen 24 lbs.,	per dozen	$10 50
No. 802—Shingling, 4 in. bit, weight per dozen 29 lbs.,	"	11 00
No. 803—Shingling, 4½ in. bit, weight per dozen 33 lbs.,	"	11 50
No. 821—Half, 3½ in. bit, weight per dozen 24 lbs.,	"	11 00
No. 822—Half, 3½ in. bit, weight per dozen 29 lbs.,	"	11 50
No. 823—Half, 4 in. bit, weight per dozen 32 lbs.,		12 00

HALF DOZEN IN A WOOD BOX. SIX DOZEN IN A CASE.

CLAW.

BROAD.



Cast Steel, Full Polished and Etched.

No. 811—Claw, 3½ in. bit, weight per dozen 25 lbs.,	per dozen	$11 50
No. 812—Claw, 4 in. bit, weight per dozen 27 lbs.,		12 00
No. 813—Claw, 4½ in. bit, weight per dozen 33 lbs.,	"	12 50
No. 841—Broad, 4 in. bit, weight per dozen 30 lbs.,		13 50
No. 842—Broad, 4½ in. bit, weight per dozen 34 lbs.,	"	14 50
No. 843—Broad, 5 in. bit, weight per dozen 38 lbs.,	"	17 00
No. 844—Broad, 5½ in. bit, weight per dozen 42 lbs.,		6 50
No. 845—Broad, 6 in. bit, weight per dozen 51 lbs.,	"	20 50
No. 846—Broad, 6½ in. bit, weight per dozen 56 lbs.,	"	23 00

HALF DOZEN IN A WOOD BOX. CLAW SIX DOZEN, BROAD THREE DOZEN IN A CASE.

The Old Original and Genuine Anchor Brand Rogers Tableware.

WARRANTED.

Unsurpassed in plate, workmanship and beauty of designs.

Reinforced with an extra plate at the points most exposed to wear.

THE ORIGINAL AND GENUINE ROGERS SILVER-PLATED WARE

Plated with pure silver on the best quality of nickel silver.

Manufactured by the WM. ROGERS MFG. CO. HARTFORD, CONN.

PRICES PER DOZEN.

RALEIGH PATTERN.

No.	Tea Spoons.	Doz.
2462	Al plate	$ 5 10
2463	Triple "	6 95
	Dessert Spoons.	
2464	Al plate	$ 9 10
2465	Triple "	11 75
	Table Spoons.	
2466	Al plate	$10 15
2467	Triple "	13 90
	Dessert Forks.	
2468	Al plate	$ 9 10
2469	Triple "	11 75
	Medium Forks.	
2470	Al plate	$10 15
2471	Triple "	13 90
	Twist Butters	
2472	Al plate	$11 20
2473	Triple "	15 50
	Sugar Shells.	
2474	Al plate	$ 9 60
2475	Triple "	11 75

LEXINGTON PATTERN.

No.	Tea Spoons.	Doz.
2466	Al plate	$ 5 10
2467	Triple "	6 95
	Dessert Spoons.	
2468	Al plate	$ 9 10
2469	Triple "	11 75
	Table Spoons.	
2470	Al plate	$10 15
2471	Triple "	13 90
	Dessert Forks.	
2472	Al plate	$ 9 10
2473	Triple "	11 75
	Medium Forks.	
2474	Al plate	$10 15
2475	Triple "	13 90
	Twist Butters.	
2476	Al plate	$11 20
2477	Triple "	15 50
	Sugar Shells.	
2478	Al plate	$ 9 60
2479	Triple "	11 75

MAYFLOWER PATTERN.

No.	Tea Spoons.	Doz.
2480	Al plate	$ 5 10
2481	Triple "	6 95
	Dessert Spoons.	
2482	Al plate	$ 9 10
2483	Triple "	11 75
	Table Spoons.	
2484	Al plate	$10 15
2485	Triple "	13 90
	Dessert Forks.	
2486	Al plate	$ 9 10
2487	Triple "	11 75
	Medium Forks.	
2488	Al plate	$10 15
2489	Triple "	13 90
	Twist Butters.	
2490	Al plate	$11 20
2491	Triple "	15 50
	Sugar Shells.	
2492	Al plate	$ 9 60
2493	Triple "	11 75

AMERICA PATTERN.

No.	Tea Spoons.	Doz.
2494	Al plate	$ 5 10
2495	Triple "	6 95
	Dessert Spoons.	
2496	Al plate	$ 9 10
2497	Triple "	11 75
	Table Spoons	
2498	Al plate	$10 15
2499	Triple "	13 90
	Dessert Forks.	
2500	Al plate	$ 9 10
2501	Triple "	11 75
	Medium Forks.	
2502	Al plate	$10 15
2503	Triple "	13 90
	Twist Butters.	
2504	Al plate	$11 20
2505	Triple "	15 50
	Sugar Shells.	
2506	Al plate	$ 9 60
2507	Triple "	11 75

SHELL PATTERN.

No.	Tea Spoons.	Doz.
2508	Al plate	$ 4 55
2509	Triple "	6 40
	Dessert Spoons.	
2510	Al plate	$ 8 00
2511	Triple "	10 70
	Table Spoons.	
2512	Al plate	$ 9 10
2513	Triple "	12 80
	Dessert Forks.	
2514	Al plate	$ 8 00
2515	Triple "	10 70
	Medium Forks.	
2516	Al plate	$ 9 10
2517	Triple "	12 80
	Twist Butters.	
2518	Al plate	$10 70
2519	Triple "	14 95
	Sugar Shells.	
2520	Al plate	$ 8 55
2521	Triple "	10 70

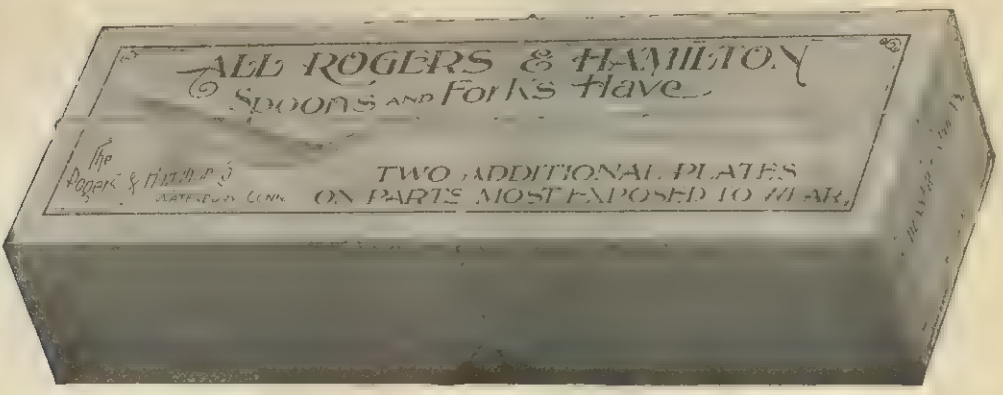
TIPPED PATTERN.

No.	Tea Spoons.	Doz.
2522	Al plate	$ 4 75
2523	Triple "	6 40
	Dessert Spoons.	
2524	Al plate	$ 8 00
2525	Triple "	10 70
	Table Spoons.	
2526	Al plate	$ 9 10
2527	Triple "	12 80
	Dessert Forks.	
2528	Al plate	$ 8 00
2529	Triple "	10 70
	Medium Forks.	
2530	Al plate	$ 9 10
2531	Triple "	12 80
	Twist Butters.	
2532	Al plate	$10 70
2533	Triple "	14 95
	Sugar Shells.	
2534	Al plate	$ 8 55
2535	Triple "	10 70

The above prices are subject to the regular discount.

The Rogers & Hamilton WATERBURY, CONN. High Grade Silver Plated Flatware.

Cuts show size of Tea Spoons. Prices quoted are per dozen.



TIPPED PATTERN

Tea Spoons.

No.	Per doz.
2362 A1 plate	$ 5 10
2363 XII "	6 00
2364 Triple "	7 20

Dessert Spoons.

2365 A1 plate	$ 9 00
2366 XII "	10 20
2367 Triple "	12 00

Table Spoons.

2368 A1 plate	$10 20
2369 XII "	12 00
2370 Triple "	14 40

Dessert Forks.

2371 A1 plate	$ 9 00
2372 XII "	10 20
2373 Triple "	12 00

Medium Forks.

2374 A1 plate	$10 20
2375 XII "	12 00
2376 Triple "	14 40

TUDOR FRENCH GRAY PATTERN.

Tea Spoons.

No.	Per doz.
2377 A1 plate	$ 5 70
2378 XII "	6 60
2379 Triple "	7 80

Dessert Spoons.

2380 A1 plate	$10 20
2381 XII "	11 40
2382 Triple "	13 20

Table Spoons.

2383 A1 plate	$11 40
2384 XII "	13 20
2385 Triple "	15 60

Dessert Forks.

2386 A1 plate	$10 20
2387 XII "	11 40
2388 Triple "	13 20

Medium Forks.

2389 A1 plate	$11 40
2390 XII "	13 20
2391 Triple "	15 60

SHELL PATTERN.

Tea Spoons.

No.	Per doz.
2392 A1 plate	$ 5 10
2393 XII "	6 00
2394 Triple "	7 20

Dessert Spoons.

2396 A1 plate	$ 9 00
2396 XII "	10 20
2397 Triple "	12 00

Table Spoons.

2398 A1 plate	$10 20
2399 XII "	12 00
2400 Triple "	14 40

Dessert Forks.

2401 A1 plate	$ 9 00
2402 XII "	10 20
2403 Triple "	12 00

Medium Forks.

2404 A1 plate	$10 20
2405 XII "	12 00
2406 Triple "	14 40

MARQUISE PATTERN.

Tea Spoons.

No.	Per doz.
2407 A1 plate	$ 5 70
2408 XII "	6 60
2409 Triple "	7 80

Dessert Spoons.

2410 A1 plate	$10 20
2411 XII "	11 40
2412 Triple "	13 20

Table Spoons.

2413 A1 plate	$11 40
2414 XII "	13 20
2415 Triple "	15 60

Dessert Forks.

2416 A1 plate	$10 20
2417 XII "	11 40
2418 Triple "	13 20

Medium Forks.

2419 A1 plate	$11 40
2420 XII "	13 20
2421 Triple "	15 60

RAPHAEL PATTERN.

Tea Spoons.

No.	Per doz.
2422 A1 plate	$ 5 70
2423 XII "	6 60
2424 Triple "	7 80

Dessert Spoons.

2425 A1 plate	$10 20
2426 XII "	11 40
2427 Triple "	13 20

Table Spoons.

2428 A1 plate	$11 40
2429 XII "	13 20
2430 Triple "	15 60

Dessert Forks.

2431 A1 plate	$10 20
2432 XII "	11 40
2433 Triple "	13 20

Medium Forks.

2434 A1 plate	$11 40
2435 XII "	13 20
2436 Triple "	15 60

ALDINE PATTERN.

Tea Spoons.

No.	Per doz.
2437 A1 plate	$ 5 70
2438 XII "	6 60
2439 Triple "	7 80

Dessert Spoons.

2440 A1 plate	$10 20
2441 XII "	11 40
2442 Triple "	13 20

Table Spoons.

2443 A1 plate	$11 40
2444 XII "	13 20
2445 Triple "	15 60

Dessert Forks.

2446 A1 plate	$10 20
2447 XII "	11 40
2448 Triple "	13 20

Medium Forks.

2449 A1 plate	$11 40
2450 XII "	13 20
2451 Triple "	15 60

The above prices are subject to the regular discount.

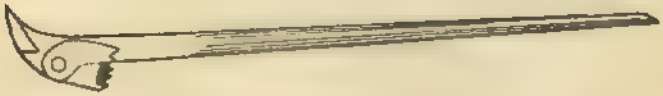
The World Moves Itself
But **Samson**
Moves the Cars

THE SAMSON
Patented in the United States
and Foreign Countries.
Price $5.00

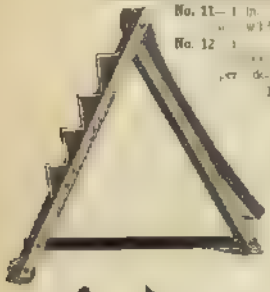
BUY A
Samson Locomotive
And have a
LITTLE SWITCH ENGINE
Of your own.

Samson Locomotive
Patented in the United States
and Foreign Countries.
Price $6.00

Justice Spike Puller



WAGON JACKS.



No. 11— 1 in. capacity 2,000 lbs. wt 9 lbs. per dozen $ 2.00

No. 12 [illegible] capacity [illegible] lbs. wt [illegible] per dozen 3.00

No. 13. Made of 2in. [illegible] pattern, [illegible] bearing, best [illegible] and malleable [illegible] handles, wt [illegible] lbs. per dozen 27.00

Wilcox's Japanned Steel, Operation by Compound Levers Lifting Perpendicularly

No. 1—Capacity 900 lbs. wt per dozen 130 lbs. per dozen $ 5.00

No. 2—Capacity 1,800 lbs. wt per [illegible] "

No. 3—Capacity 4,000 lbs. wt per doz. [illegible] "

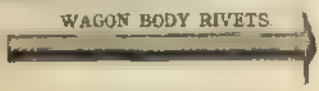
[illegible] Lifting Jacks.

No. 15— Mercer's, 18 in., cast and wrought iron, wood handle, will lift 2,000 lbs. wt 13 lbs., [illegible] per dozen 15.00

No. 18—Wilcox, 28 in., steel upright, iron base and lever [illegible] lbs. [illegible] per dozen 12.00

[illegible] Jacks are made in the [illegible] construction, [illegible] Improved Jacks by passing the lever through the [illegible] upon the top [illegible] and raise the load about 2 in.

WAGON BODY RIVETS.



Wrought Iron Flat Head.

No. 43— [illegible] in. length 1 1¼ [illegible] 2 2½ and 3 in. [illegible] per pound $0.16

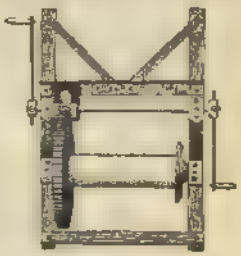
No. 44 [illegible] in. length 1 2¼ [illegible] 2 2½ 3 [illegible] and 4 [illegible] per pound 15½

Soft Steel Oval Head.

No. 53 [illegible] in. length 1, 1¼, 1½, 1¾, 2, 2¼, 2½, 2¾, and 3 in. [illegible] per pound $0.16

No. 54 [illegible] in. length 1, 1¼ [illegible] 2½, 2 3½, 3½ and 4 in., [illegible] per [illegible] 15

HOISTING CRANES.



No. 2— Jungle back geared, 4 [illegible] 14 in. cast winding drum, [illegible] steel chain 32 [illegible] 24 [illegible] steel truck and stable ranks, 6 x 16 in. gear wheel, with heavy cogs, 2 in. pinion wheel with 5 heavy steel bars, wt 125 lbs. each $ 8.00

[illegible] 1,000 lbs. and will raise 2,000 with ease [illegible] cogs, wrought and [illegible] machine [illegible] throughout, handsome [illegible] No. 3 [illegible] Engravings [illegible] and stand.

JACK SCREWS.

Cast Iron Barrel, Brass Bottom, Steel Screw and Collar

SCREW [illegible]	A [illegible]	[illegible]	[illegible]	WEIGHT [illegible]	EACH.
¾	5	[illegible]	¾	9	[illegible]
1⅛ x 10	10	[illegible]	2	[illegible]	[illegible]
1½	12	[illegible]	2	[illegible]	[illegible]
⅞	8	11	1⅝	18	$ 3.00
1⅛	10	13	1⅝	21	3.75
1¼	12	15	16	25	4.25
1⅜	14	17	16	30	6.75
2	6	10	20	19	5.25
2	8	8	12	25	7.00
2 x 10	10	14	20	26	6.75
2 x 12	12	16	20	30	7.50
2	14	18	20	35	6.25

Waterbury Clock Co.'s Fine Office Clocks and Regulators.

8-INCH DROP OCTAGON.

Oak or veneered, 8-inch dial, height 19 inches.

No. 6144	Eight-day, time	each	$6 00
No. 6145	Eight-day, half-hour strike	"	7 85
	Alarm additional	"	70
No. 6146	Eight-day, time calendar	"	8 70
No. 6147	Eight-day, half-hour strike, calendar	"	8 00

12-INCH DROP OCTAGON.

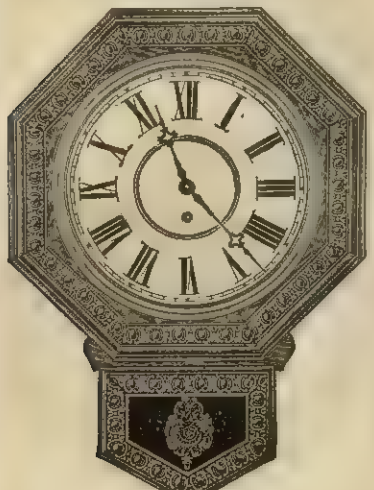
Oak or veneered, 12-inch dial, height 24 inches

No. 6148	Eight-day, time	each	$7 85
No. 6149	Eight-day, half-hour strike	"	8 70
	Alarm additional	"	70
No. 6150	Eight day, time calendar	"	8 00
No. 6151	Eight-day, half-hour strike, calendar	"	9 85

10-INCH DROP OCTAGON.

Oak or veneered, 10-inch dial, height 22 inches.

No. 6152	Eight-day, time	each	$6 70
No. 6153	Eight-day, half-hour strike	"	8 00
	Alarm additional	"	70
No. 6154	Eight-day, time, calendar	"	7 35
No. 6155	Eight-day, half-hour strike, calendar	"	8 70



12-INCH ARION

Oak, 12-inch dial, height 24 inches.

No. 6169	Eight-day, time	each	$7 85
No. 6170	Eight-day, half-hour strike	"	8 70
No. 6171	Eight-day, time, calendar	"	8 00
No. 6172	Eight-day, half hour strike, calendar	"	9 85

REGENT.

Oak or veneered, 12-inch dial, height 32 inches

No. 6156	Eight-day, time	each	$11 35
No. 6157	Eight-day, half-hour strike	"	12 70
No. 6158	Eight-day, half hour strike, gong	"	13 10
No. 6159	Eight-day, time, calendar	"	12 00
No. 6160	Eight-day, half-hour strike, calendar	"	13 35
No. 6161	Eight-day, half-hour strike, gong, calendar	"	13 75

HALIFAX.

Oak, 8-inch rococo dial, height 32¼ inches.

No. 6173	Eight-day, spring, time	each	$8 35
No. 6174	Eight-day, spring, half-hour strike, gong	each	10 35

ADMIRAL.

Oak only, 12-inch dial, height 32 inches.

No. 6162	Eight-day, time	each	$10 70
No. 6163	Eight-day, half-hour strike	"	12 00
No. 6164	Eight-day, half-hour strike, gong	"	12 40
No. 6165	Eight-day, time, calendar	"	11 35
No. 6166	Eight-day, half-hour strike, calendar	"	12 70
No. 6167	Eight day, half hour strike, gong, calendar	"	13 10
No. 6168	30-day time, with second hand	"	12 70

10-INCH HERON.

Oak, 10-inch dial, height 30 inches.

No. 6175	Eight-day, time	each	$7 70
No. 6176	Eight-day, half-hour strike	"	9 00
No. 6177	Eight-day, time, calendar	"	8 35
No. 6178	Eight-day half-hour strike, calendar	"	9 70

The above prices are subject to the regular discount.

Seth Thomas Clock Co.'s Fine Office Regulators.

Prices Each.

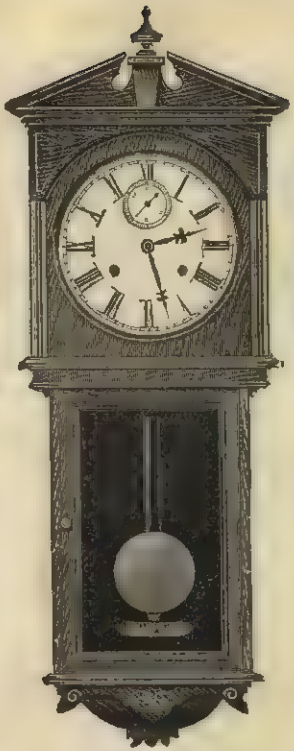
Guaranteed Accurate Timekeepers.

12-INCH DROP OCTAGON.
Rosewood, walnut veneer or old oak, polished, height 23½ inches.

No. 6179 8-day spring, time..... $ 9 60
No. 6180 8-day spring, strike..... 11 60

12-INCH DROP OCTAGON CALENDAR.
Rosewood or walnut veneer, polished, height 23½ inches.

No. 6181 8-day spring, time..... $10 60
No. 6182 8-day spring, strike..... 12 60



UMBRIA.
Made in old oak only.

No. 6183 15-day, time..... $23 35
No. 6184 8-day, strike..... 25 35
Height 40½ inches, 10-inch dial.

GLOBE.
Rosewood, walnut or old oak veneer, polished.

No. 6185 8-day spring, time..... $14 70
No. 6186 8-day spring, strike..... 17 10
Height 31 inches, 12-inch dial.

RIO.
Rosewood or walnut veneer, polished.

No. 6187 8-day spring, strike..... $12 60
12-inch dial, height 25¾ inches.

All Orders Filled Same Day Received.

No Delay.

OFFICE No. 5.
Made in old oak only.

No. 6188 8-day, time..... $13 25
No. 6189 8-day, strike..... 15 25
Height 23½ in., width 10¼ in., 13-in. dial.

CHATHAM.
Mahogany or golden oak.

No. 6190 8-day pendulum, time..... $10 00
No. 6191 8-day pendulum, strike..... 12 00
12-inch dial, diameter 16 inches.

The above prices are subject to the regular discount.

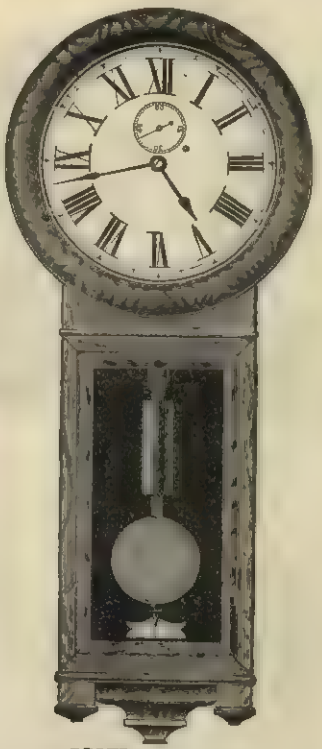
SETH THOMAS CLOCK CO.'S FINE WEIGHT REGULATORS.

Guaranteed Accurate Timekeepers. PRICES EACH.

REGULATOR No. 60.

Golden oak or mahogany, 8 day, weight, time, beats seconds, height 58½ inches, 14 inch dial. Movement has cut pinions of solid steel, finished plates, Graham escapement, brass covered zinc ball, wood rod.

No 6053 Each..... $147 00



REGULATOR No. 2.

Walnut, cherry, or old oak veneer, polished, 8 day, weight, time, height 34 inches, 12 inch dial. Movement 2¼x4¼ inches, lantern pinions, Graham pallets, brass covered zinc ball and wood rod, eighty beats to the minute, movement has retaining power.

No. 6054 Each..... $30 25

BEST CLOCKS ON THE MARKET

REGULATOR No. 9.

Walnut, cherry or oak.

8 day, weight, time, height 48 inches, 10 inch dial.

No. 6055 Each..... $52 10

REGULATOR No. 18.

Walnut, or old oak veneer, polished, 8 day, weight, time 14 inch dial, height 54 in., beats seconds. Movement has Graham pallets, lantern pinions and retaining power, wood rod, brass covered zinc ball, brass weight.

No. 6056 Each..... $57 15

The above prices are subject to the regular discount.

Seth Thomas Clock Co.'s Fine Clocks

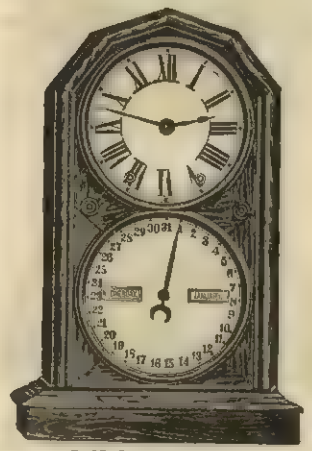
No. 6302 O G rosewood or walnut veneer, polished, 1 day, weight strike, 7½ inch dial. Height 25 inches $10 10

No. 6303 8-day, weight strike, 8-inch dial Height 20½ inches $16 00

The above can be furnished with alarms 85c extra

GUARANTEED ACCURATE TIMEKEEPERS.

PRICES EACH.



PARLOR CALENDAR No. 5.

No. 6304 Walnut veneer, polished, 8-day, spring strike, cup bell, perpetual calendar. Height 20 inches, dial 8 inches..... $28 55

All orders filled same day received; no delay.

PARLOR CALENDAR No. 3.

No. 6305 Walnut veneer, polished, 8-day, spring strike, cup bell, perpetual calendar. Height 27 inches, dial 8 inches... $27 75

LONG ALARM.

No. 6306 Metal case, oxidized copper finish, 4½-inch dial. Height 9 inches. The alarm rings about 15 minutes with one winding but can be switched off at pleasure 1 day, time alarm $5 55

ECHO ALARM.

NICKEL PLATED.

No. 6307 One day, lever, time alarm, 4½-inch dial $2 80

The above prices are subject to the regular discount.

SETH THOMAS CLOCK CO.'S CLOCKS

Are the Most Reliable Timekeepers.

JOKER.

No. 6308 Gold gilt front and handle, nickel plated frame and glass sides, 1 day, lever, time alarm, 1 day, lever strike, 4 inch dial. Height 7 inches. Time alarm . . $4 80

No. 6309 Strike 5 20

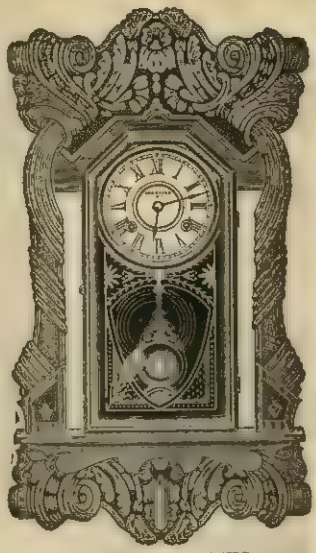
NEW HAVEN CLOCK CO.'S FINE SHELF AND HANGING CLOCKS.

PRICES EACH. ACCURATE TIMEKEEPERS, GUARANTEED.

CAMDEN—HANGING.
Oak or dark wood.
Height 25 inches, width 14 inches, dial 6 inches.

No. 6287	8-day, half hour strike	$4 90
No. 6288	" " " alarm	5 55
No. 6289	" " " gong	5 40
No. 6290	" " " " alarm	6 10

CONGRESSIONAL.
Solid oak cabinet.
Height 17¼ inches, width 13 inches, dial 6 inches.
Eight-day, half-hour strike, cathedral gong, fancy dial.
No. 6291 ..... $7 40



NORWICH—HANGING.
Oak or dark wood.
Height 27 inches, width 15½ inches, dial 6 inches.

No 6292	8-day, half hour strike	$5 30
No. 6293	" " " " alarm	5 95
No. 6294	" " " gong	5 80
No. 6295	" " " " alarm	6 50

CONROY.
Height 25 inches, width 15 inches, dial 6 inches, fitted with barometer, theremometer and calendar.
Eight-day, half-hour strike.
No. 6296 ..... $7 70

OCCIDENTAL.
Height 24 in., width 16½ in., dial 6 in., oak or walnut with gilt ornaments, mirror on sides.
Eight-day, half-hour strike.

No 6297	Eight-day time	$11 55
No 6298	" " alarm	12 20
No. 6299	" " gong	12 10
No. 6300	" " " alarm	12 75

SAMPSON—OAK.
Height 25 inches, width 15 inches, dial 6 inches.
Fitted with barometer, thermometer, spirit level and calendar.
Eight-day, half-hour strike.
No. 6301 ..... $8 10

The above prices are subject to the regular discount.

Study Music With The Masters By Mail.

We have made a contract with the famous Siegel-Myers Correspondence School of Music, Steinway Hall, Chicago, to furnish our customers, free of charge, Instructions on any Violin, Mandolin, Guitar or Banjo purchased from our catalog.

Purchasers of instruments now have the opportunity to secure, without the cost of one penny for instruction or tuition, the most musicianly, thorough and comprehensive correspondence course of instruction in music ever devised.

High Character of Course we offer Free to our Customers.

Although we make no charge whatever for a certificate of scholarship entitling the holder to a thorough training on any instrument purchased from our catalog, and further, we have not raised the price of our instruments one penny in order to make this offer, yet we wish it distinctly understood that we would neither recommend nor endorse, for any consideration, a system of instruction which did not possess such unquestionable merit as to appeal to the most critical and intelligent as being worthy of the highest praise. We have personally examined these courses and found that they not only possess a solid musical value, but the clear, practical and progressive manner in which they are arranged, as well as the thoroughness and simplicity of every lesson, insures any student, no matter how remote his residence, a sure and ready means of learning to play his instrument, and acquiring a broad and solid foundation upon which a successful musical career may with certainty be built.

THE SIEGEL-MYERS CORRESPONDENCE SCHOOL OF MUSIC.

The Siegel-Myers Correspondence School of Music is the only school known to us teaching music successfully by correspondence. The musicians and instructors are artists of world-wide fame and the system of teaching used has been endorsed by the musical critics and educators of the country who have pronounced it the finest ever devised. The school occupies a high place of distinction among the music schools of the country. Its headquarters are in Steinway Hall, Chicago. This being situated in the center of the United States it is a great saving of time to students sending in their examination papers from any part of the country.

Since its organization several years ago the **Siegel-Myers Correspondence School of Music** has had a wonderful growth. It has students in every state in the Union, besides many in Canada, Honolulu, Alaska, Mexico and the British West India Islands. Its students being among the most enlightened, intelligent and progressive class of people, are quick to appreciate the many advantages offered by the school. No pains or expense are spared by the **Siegel-Myers Correspondence School of Music** to make the connection and association of every student both pleasant and profitable as well as instructive. Every student who enters the school is assured the most courteous treatment and careful attention.

We include a certificate with each Violin, Guitar, Mandolin and Banjo purchased from this catalog which entitles the holder to a course of free lessons, given by masters, for a term of one year by the payment of a nominal sum to defray the cost of stationery, etc., which will not exceed 13c per week. A two year course is included with instruments listed over $30.00.

"THE SYLVIA"

STANDARD SIZE GUITAR.

Mahogany finish back and sides, hand polished, spruce top, fancy colored wood inlaying around sound-hole, edge inlaid and bound with celluloid, neck mahogany finish, finger-board with pearl position dots, our own make nickel plated patent head, No. 30 metal tail piece, nickel plated, strung with steel strings

No 9490 Each.....$8 70

"THE JUPITER."

STANDARD SIZE GUITAR.

Dark mahogany finish back and sides, hand polished, spruce top, fancy colored wood inlaying around sound-hole, edge inlaid with fancy colored woods and bound with celluloid, neck mahogany finish, finger-board with pearl position dots, our nickel plated patent head, metal tail piece, nickel plated, strung with steel strings.

No. 9505 Each.....$10 00

"THE COLUMBUS."

STANDARD SIZE GUITAR.

Birch back and sides, dark mahogany finish, hand polished, spruce top, broad, fancy colored wood inlaying around sound-hole and edge, top and back edges bound with celluloid neck mahogany finish, finger-board with pearl position dots, nickel plated patent head, metal tail piece, nickel plated, strung with steel strings.

No. 9615 Each.....$11 70

THREE-QUARTER SIZE GUITAR.

Same description as No. 9615, three-quarter size, strung with steel strings on metal tail.

No. 9610 Each.....$11 70

STANDARD SIZE GUITAR.

Beautifully figured birch back and sides, dark mahogany finish, hand polished, spruce top, fancy colored wood inlaying around sound-hole, corded inlaying on edge, top and back edges bound with celluloid, fancy inlaid stripe in back, neck mahogany finish, veneered head piece, rosewood finger-board, pearl position dots, our own make nickel plated patent head, metal tail piece, nickel plated, strung with steel strings.

No. 9620 Each.....$14 70

The above prices are subject to the regular discount.

GUITARS.

"The Lakeside."

STANDARD SIZE GUITAR.

No. 9840 Quartered oak back and sides, hand polished, spruce top, broad fancy colored wood inlaying around sound-hole, edge inlaid with broad fancy colored wood inlaying and bound with white celluloid, neck mahogany finish, finger-board has pearl position dots, nickel plated patent head, metal tail piece, nickel plated, strung with steel strings.....each $11 70

No. 9846 Quartered oak back and sides, hand polished, spruce top, broad fancy colored wood inlaying around sound hole, top and back edges inlaid with broad stripe of fancy colored wood and bound with white celluloid, broad stripe of fancy colored wood inlaying down center of back, neck mahogany finish, veneered head piece, rosewood finger-board, pearl position dots, nickel plated patent head and metal tail piece, strung with steel strings .....each 17 20

No. 9860 Concert size.—Beautiful Danish oak back and sides, spruce top, broad corded fancy colored wood and celluloid inlaying around sound-hole, top and back edges bound with white celluloid, fancy colored wood stripe in back, mahogany neck, rosewood veneered head piece, body and neck beautifully hand polished, ebony finger-board bound with celluloid, pearl position dots, our "Own Make" nickel plated patent head, ebony bridge, strung with gut strings, each 25 00

"The Marquette."

STANDARD SIZE GUITAR.

No. 9725 Birch back and sides, rosewood finish, spruce top, broad fancy colored corded wood inlaying around sound-hole and edge, top and back edges bound with white celluloid, fancy colored stripe in back, body grained a rich rosewood and beautifully finished, neck mahogany finish, veneered head piece, rosewood finger-board, pearl position dots, our "Own Make" nickel plated patent head, No. 35 tail piece, nickel plated, strung with steel strings.....each $15 85

No. 9730 Same description as No. 9725. Rosewood bridge, strung with gut strings .....each 17 10

"The Arion."

STANDARD SIZE GUITAR.

No. 9965 Mahogany back and sides, spruce top, broad fancy colored wood inlaying around sound-hole, top edge inlaid with fancy colored wood and bound with white celluloid, body finished a beautiful shade of light mahogany, hand polished, neck mahogany finish, finger-board with pearl position dots, our "Own Make" nickel plated patent head, No. 304 metal tail piece, nickel plated, strung with steel strings .....each $14 35

No. 9971 Dark mahogany back and sides, hand polished, broad fancy corded colored wood inlaying around sound-hole and front and back edges, top and back edges bound with white celluloid, broad fancy colored stripe of inlaying down center of back, mahogany finish neck, veneered head piece, rosewood finger-board with pearl position dots, our "Own Make" nickel plated patent head and metal tail piece, strung with steel strings.....each 20 00

No. 9980 Beautiful figured dark mahogany back and sides, hand polished, broad fancy corded colored wood inlaying around sound hole and edge, top and back edges bound with white celluloid, broad fancy corded stripe in back, mahogany neck, rosewood veneered head piece, ebony finger-board bound with celluloid, pearl position dots, our "Own Make" nickel plated patent head, ebony bridge, strung with gut strings.....each 25 05

"The American Conservatory."

STANDARD SIZE GUITAR.

No. 91012 Rosewood back and sides, beautifully hand polished, spruce top, broad colored inlaying around sound-hole and front and back edges, top and back edges bound with white celluloid, broad stripe of fancy colored wood down the center of the back, mahogany neck, rosewood veneered head piece, rosewood finger-board with pearl position dots, our "Own Make" nickel plated patent head, rosewood bridge, strung with gut strings.....each $25 00

THREE-QUARTER SIZE GUITAR.

No. 91006 Same description as No. 91012, three-quarter size, strung with gut strings.....each $25 00

STANDARD SIZE GUITAR.

No 91015 Rosewood back and sides, beautifully hand polished, extra broad fancy colored wood inlaying around sound-hole and edge, top and back edges bound with white celluloid, broad fancy corded stripe in back, mahogany neck, rosewood veneered head piece, ebony finger board bound with celluloid, pearl position dots, our "Own Make" nickel plated patent head, ebony bridge, strung with gut strings.....each $28 40

CONCERT SIZE GUITAR.

No. 91020 Concert size. Same description as No. 91015, strung with gut strings.....each $30 85

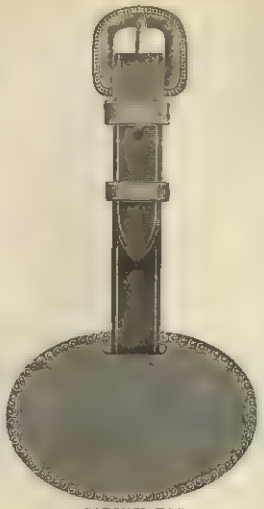
The above prices are subject to the regular discount.

FINE STERLING SILVER NOVELTIES.

Cuts are exact size.

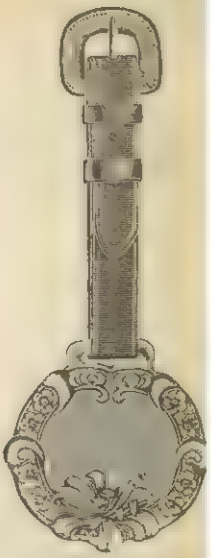
PRICES EACH.

SATCHEL TAG.
Sterling silver, French gray finish, leather strap.
No. 8126 Each . . $2 20



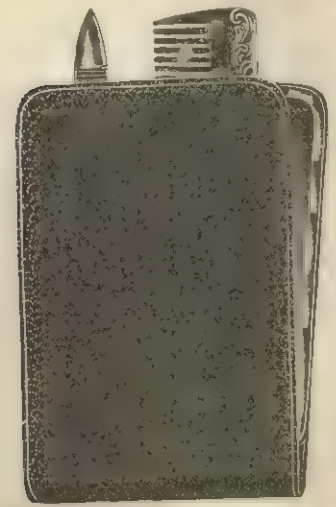
SATCHEL TAG
Sterling silver, beaded edge, satin, leather strap.
No. 8127 Each $1 35

SATCHEL TAG.
Sterling silver, French gray finish, leather tag.
No. 8128 Each . $1 05



SATCHEL TAG.
Sterling silver, French gray finish, oxidized leather strap.
No. 8129 Each $1

FOLDING POCKET CORKSCREW
Sterling silver case, polished.
No. 8130 Each $2 20



GENTS' POCKET COMPANION.
Comb nail file and mirror in fine seal folding case
No. 8131 Each

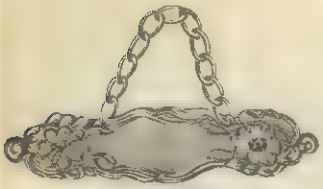
POCKET COMB AND NAIL FILE.
Sterling silver mounted comb and fine steel file. Put up in black leather case.
$1 50 No. 8132 Each..... $1 50

GENTS' POCKET COMPANION.
Contains comb nail file and [illegible] pocket scissors. Put up in fine seal leather case
No. 8133 Each ... $6 00

The above prices are subject to the regular discount.

FINE STERLING SILVER NOVELTIES.

Cuts are exact size. PRICES EACH.



COAT HANGER
Sterling silver, French gray finish.
No. 8134 Each..... $2 10

COAT HANGER.
Sterling silver.
No. 8135 Each..... $1 35

COAT HANGER
STERLING SILVER
No. 8136 Each . $1 15

HAT MARK
Sterling silver, French gray finish.
No. 8137 Each $1 35

HAT MARK.
Sterling silver, satin.
No. 8138 Each 45c

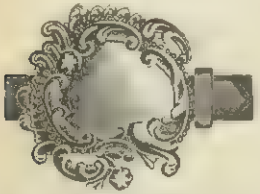
HAT MARK
Sterling silver, satin.
No. 8139 Each .... .45c

CANE OR UMBRELLA PLATE.
Sterling silver, French gray finish.
No. 8140 Each..... 75c

CANE OR UMBRELLA PLATE.
Sterling silver, satin.
No. 8141 Each..... .75c

KEY CHECK.
Sterling silver, satin.
No. 8142 Each 75c

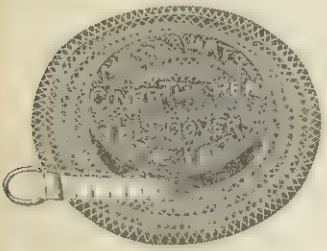
KEY CHECK.
Sterling silver, French gray finish, extra heavy.
No. 8146 Each $3 55



UMBRELLA CLASP.
Sterling silver buckle, leather strap.
No. 8143 Each. 75c

TAPE MEASURE.
3 feet, in fine celluloid case, sterling silver trimmings.
No. 8144 Each..... $1 05

TIE CLASP.
Roman finish.
No. 8145 Each $1 00



TAPE MEASURE
3 feet, white metal, satin finish, raised letters.
No. 8147 Each . . .

TIE CLASP.
Sterling silver, ruby set.
No. 8148 Each .70c

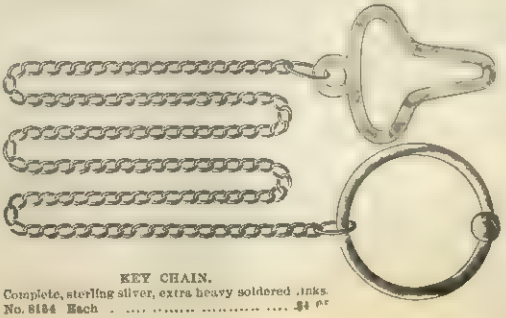
TIE CLASP
Sterling silver, chased and enameled, turquoise set.
No. 8149 Each $1 05

TIE CLASP.
Solid gold, Roman, beaded edge
No. 8150 Each $2 55

TIE CLASP.
Solid gold, Roman finish
No. 8151 Each $1 55

KEY RING.
Sterling silver, French gray.
No. 8152 Each..... $1 15

KEY RING.
Sterling silver, polished.
No. 8153 Each.....$1 05



KEY CHAIN.
Complete, sterling silver, extra heavy soldered links.
No. 8154 Each . ... $4 [illegible]

The above prices are subject to the regular discount.

Fine Solid Sterling Silver Baby Spoons—Guaranteed $\frac{925}{1000}$ Fine. Illustrations are exact size.

BABY SPOON.
No. 5224 Each..... $4 20

BABY SPOON.
No. 5225 Each..... $4 35

BABY SPOON
No. 5226 Each..... $4 20

BABY SPOON.
No. 5227 Each $3 80

BABY SPOON.
No. 5228 Each . $4 20

All orders filled same day received. No delay.

BABY SPOON.
No. 5229 Each $3 35

BABY SPOON.
No. 5230 Each .. $2 50

BABY FORK.
No. 5231 Each $4 20

BABY SPOON.
No. 5232 Each $4 20

BABY SPOON.
No. 5233 Each..... $4 20

BABY SPOON
No. 5234 Each . $4 20

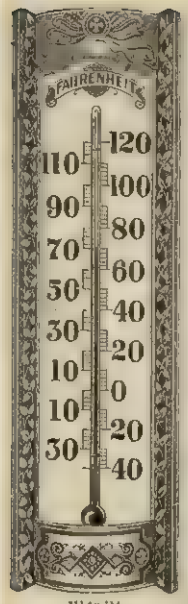
BABY SPOON
No. 5235 Each .. $4 20

BABY SPOON.
No. 5236 Each $4 20

BABY SPOON.
No. 5237 Each..... $4 20

The above prices are subject to the regular discount.

Thermometers, Storm Glasses, Etc.



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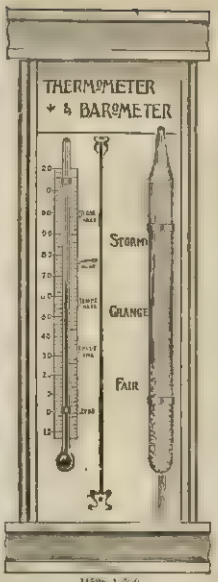

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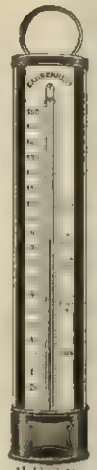

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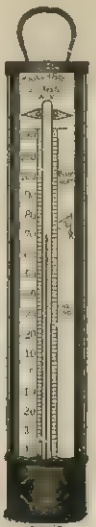

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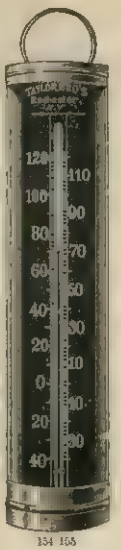

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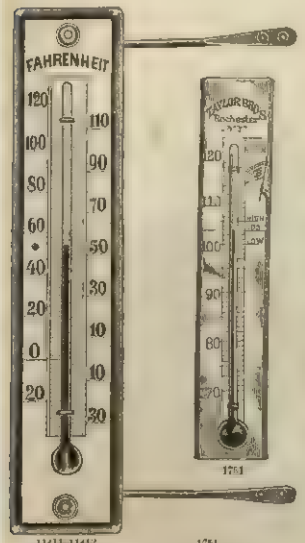
1675

DISTANT READING

		EACH
No. 111	8-inch lithographed tin back, spirit tubes	$ 0 30
No. 112	10-inch " " " "	40
No. 113	8-inch " wood back "	40
No. 114	10-inch " " " "	50
No. 11528	10-inch white enameled celluloid scale barometer and thermometer combined	50
No. 11529	8-inch thermometer and storm glass, mounted on lithographed background, cherry moulded ornament both ends, at side bright wire rod	35
No. 11	7-inch common japanned tin case	25
No. 13	8-inch " " " "	30
No. 15	10-inch " " " "	35
No. 14	12-inch " " " "	40
No. 176 ½	8-inch standard japanned tin case, made with heavy rases and scales, seasoned tubes tested and graduated with special care as to accuracy	1 75
No. 177	10 inch, as above	2 30

		EACH
No. 154	5-inch copper case, distance reading	$ 1 00
No. 155	10-inch " " "	1 20
No. 1675	5-inch Self-Registering, japanned tin case, silver metal scale	6 80
No. 1751	4-inch Incubator, thoroughly seasoned tubes, T. B. Co	1 20
No. 1820	8-inch Daily common grade glass floating thermometer	30
No. 1820	8-inch Standard thermometer, as above	95
No. 11411	8-inch brass wood scaled edge white enamel dial on plate, glass thermometer tube enameled, nickel plated arms for attaching to window, either mercury or red spirit tubes	2 00
No. 11412	10-inch, same as above	2 50



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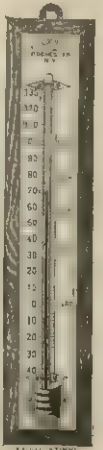

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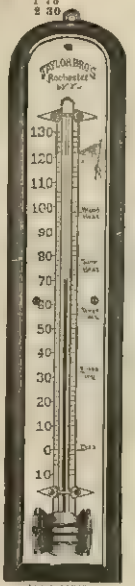

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1851

11355-11356

11100-11101

167½

WOOD BACK, METAL SCALE.

		EACH
No. 11100	7-inch Common grade, walnut or cherry finish	$ 0 65
No. 11101	8-inch " " " "	80
No. 11221	8-inch Medium grade, oak " "	1 20
No. 11222	10-inch " " " "	1 55
No. 11301	8-inch Standard grade, heavy scales, seasoned tubes, oak, ebony or white enamel back	2 30
No. 11302	10-inch, same as above	3 00
No. 11354	6-inch, Storm glass, oak back, beveled edge	1 40

		EACH
No. 1857	10-inch Bath thermometer, square wood frame and paper scale	$0 50
No. 11355	Radial Scale thermometer, with chain for attaching to chandelier, ends finished in brass, nickel plated or oxidized	3 00
No. 11356	Same as above, but with fancy ends	4 20
No. 167¼	1st quality certified 4-inch Clinical thermometer, self registering indestructible lens, registering in 1 min., hard rubber case	2 70
No. 167¼A	Same as above, in gilt case, with chain and pin	3 25

"EVER READY" PORTABLE ELECTRIC LIGHTS.

Style A.
Metal case, alligator covered.
Each.. .....$1 80

Style A Special.
Fibre case.
Each $2 05

Style B.
Metal, cloth covered.
Each $1 60

Black Metal B.
Black metal.
Each. $1 40

Style C.
Enameled tin case.
Each.....$1 80

New E.
Black metal case
Each $1 20

Jumbo Coat Pocket Lights.

Has snap switch, gives permanent light when desired
No. 20 Size 1¼x3¾x5 inches, weight 20 oz. each $3 50
Extra batteries 55 cents.

"Ever Ready" Electric Cigar Lighter.

The latest and most practical lighters on the market. Both lighters are very simple to use, only one operation necessary. When cord is withdrawn it is automatically lighted by electric spark. No danger of short circuiting. No trouble. No wires to go wrong. Nothing to get out of order. Use gasoline or benzine. Absolutely no danger
No. 815 Dry battery lighter Price, complete... $11 95
Extra batteries per set, $1.25.

No. 818 Same as No. 815 but has smaller base and battery. Price complete 10 95
Extra batteries per set 60 cents.

Jumbo Coat Pocket Lights.

No. 22 Black metal, same as No. 20. each $3 05

"Ever Ready" Electric Flash Lights

The most practical portable lights yet invented. They give from 600 to 800 brief flashes of a few moments' duration and can be used for continuous light if desired. Useful wherever and whenever you would use any other light and absolutely safe. Cheaper than matches and candles. Batteries are easily renewed. No wires to connect or attach also to split. Extra batteries can be obtained in any part of the world.

"Ever Ready" Flash Lights

No. 00 Kab 1x3½ inches each $2 05
No. 1 Pocket 1¼x3½ inches ..... " 2 50
No. 2 Larger, 1¾x11 inches ..... " 3 55
No. 3 Largest 1¾x13 inches ..... " 4 00

Improved "Ever Ready" Flash Light.

Made of material impervious to water.
No. 4 Fibre finish, 1¼x3½ inches .....each $3 05
No. 5 Fibre finish, 1¾x11 inches ..... " 4 00
No. 6 Fibre finish, 1¾x13 inches ..... " 4 90

"Ever Ready" Miner's Flash Light.

No. 14 1¼x3½ inches, each $4 95
No. 15 1¼x11 inches . " 6 05
No. 16 1¾x13 inches .. " 7 00
N. B.—Where ordered, Nos. 4 to 6, inclusive, and Nos. 14 to 16, inclusive, can be furnished with glove button fastener giving permanent light, when desired for continuous burning.

House Lamp.

An article for the home.
This is a first-class lamp for handy use around the house. It can be carried by the handle, upside down or any way, or introduced into odd, out-of-the-way places, where a kerosene lamp or candle would be impossible and dangerous.
No heat, smoke, dirt, nor danger from fire
Using this lamp a few minutes each night, one battery will give service for months before requiring renewal.
No. 211 Price complete, either in ebony or oak case . $6 00

Large lens, bell reflector.

Owing to the fact that the weight of battery is entirely supported by the bicycle frame, we are also able to supply this lamp with a larger and more powerful battery and light.
No. 28 5 cell 5½ volt lamp. Complete, with battery case..... ....$10 50
Extra battery (No. 280), 90 cents. Extra bulbs, 90 cents each

20th Century Bicycle Lamp.

No. 27 5 cell 3½ volt Century Bicycle Run Lamp. Complete with Battery case $7 50
Extra battery (No. 270), 75 cents.

The "Ever Ready" Gas Lighter.

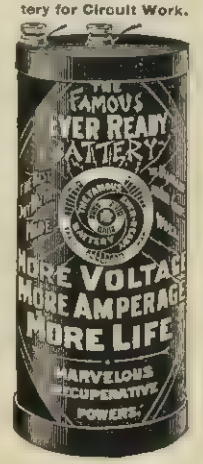
A joy in the kitchen, a pleasure in the parlor.
No. 34 Price, complete, with battery $4 50
Light about 1,500 times before a new battery is needed.

"Ever Ready" Comet

Our Special Leader.

Metal case, cloth covered 2¾x5½ inches. Comet No. 5 best value ever offered. Bash lights. Has same battery and lamp and is same size as No. 1 "Ever Ready." Has arrangement for steady light when desired. Price complete $2 20

"Ever Ready" Dry Battery for Circuit Work.

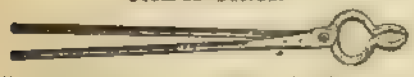


Have one-third more life than any other dry battery on the market.
No. 26 Size 6x2½ inches, each..... 35c

The above prices are subject to the regular discount.

BLACKSMITHS' TOOLS.

PICK-UP TONGS.



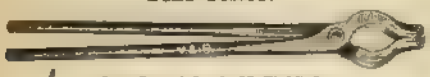
No. 201. 22 in. drop forged steel, oil finished, for picking up hot irons, wt 2½ lbs., - - - per pound $0.25

GAD TONGS.

Drop Forged Steel, Oil Finished.

No. 203—Length,	18	20	22	24 in.
Weight,	2	2½	3	3½ lbs.
Per pound,	$0.20	.20	.20	.20

BOLT TONGS.



Drop Forged Steel, Oil Finished.

No. 203—Size of iron,	⅜	½	⅝	¾	⅞	1 in.
Length,	18	18	20	20	22	
Weight,	1½	1½	2½	2½	2½	lbs.
Per pound,	$0.25	.25	.25	.25	.25	
No. 203—Size of iron	⅜	½	⅝	¾	⅞	1 in.
Length,	22	24	24	24	24	
Weight,	2½	3½	3½	4	4½	lbs.
Per pound,	$0.25	.25	.25	.25	.25	

For bolting bolts and round iron. When ordering give size of iron and length.

STRAIGHT LIP TONGS.

Drop Forged Steel, Oil Finished.

Nos.	A	1	2	3	4	5	6	7	
Length,	16	18	20	22	24	26	28	30	in.
Weight,	1½	2	2½	3	3½	3½	4½	5½	lbs.
Per pound,	$0.15	.15	.15	.15	.15	.15	.15	.15	

HORSESHOERS' TONGS.

Drop Forged Steel, Oil Finished.

No. 0—12 in., wt per doz. 8 lbs., per dozen $5.00
No. 00—14 in., wt per doz. 20 lbs., - - " 5.50

HEADING TOOLS.

Cast Steel, with Round or Square Holes.

Size,	½	⅝	¾	⅞	1	1¼	1½	1¾	In.
Weight	3	3	4	4½	4½	4½	5	5	lbs.
Per pound	$0.40	.40	.40	.40	.40	.40	.40	.40	

ANVIL PUNCHES, HARDIES AND CUTTERS.

No. 220. No. 221. No. 225. No. 226. No. 227.

Solid Steel, Oil Finished.

No. 220—Round Eye Punches, sizes of point ⅜, ½, ⅝, ¾, ⅞ and 1 in., weights 1½, 1¾, 2, 2½, 2¾, 3¼ and 3½ lbs. per pound $0.40

No. 221—Square Eye Punches, sizes of point ⅜, ½, ⅝, ¾, ⅞ and 1 in., weights 1¾, 2, 2½, 2¾, 3, 3½ and 3½ lbs. per pound, .40

No. 225—Anvil Hardies, sizes of shank ½, ⅝, ¾, ⅞, 1 and 1¼ in., to be of regular weights ⅜, ⅝, 1, 1½, 1¾, 2 and 2½ lbs., - per pound .40

No. 226—Cold Cutters, sizes of square steel ½, ⅝, ¾, ⅞, 1 and 1¼ in., weights ¾, 1, 1¼, 2½, 3 and 4 lbs., " 40

No. 227—Hot Cutters, sizes of square steel ½, ⅝, ¾, ⅞, 1 and 1¼ in., weights 1½, 1¾, 2, 2½, 3 and 4 lbs., " 40

Kitchen Clocks and Standard Regulators

NEW HAVEN CLOCK CO. AND WATERBURY CLOCK CO. GOODS.

(F.) Our "Leader" Assortment.

Consists of six clocks, 4 oak, 2 walnut, or all alike, finely made and finished, 22 in. high, 14 in. wide, 8 day, half hour strike, 6 in. dial, assorted in 3 designs, decorated glass door

Plain half hour strike, per case of 6 clocks.... 9.10
As above, with alarm, per case of 6 clocks 10.10
As above, with gong alarm, per case of 6 clocks 11.75

(K.) The "Favorite" Assortment.

Consists of 6 clocks assorted oak and walnut, or all alike, in three different designs, gloss polished, 22½ in. high, 14 in. wide, neatly ornamented, 8 day, half hour strike, 6 in. dial.

Plain half hour strike, per case of 6 clocks 11.00
As above, with alarm 12.50
As above, with gong alarm 13.00

"NORWICH" ASSORTMENT (N. H. C. Co.)

Consists of 6 clocks, assorted designs, in walnut or oak or assorted oak and walnut in case, 26 in. high, 15 in. wide, 6 in. dial, 8 day, half hour strike, handsomely decorated front and highly gloss polished, specially designed artistic models.

Plain half hour strike, per case of 6 clocks 11.25
As above, with alarm, per case of 6 clocks .. 12.75
As above, with gong alarm, per case of 6 clocks, 13.90

Conroy Combination Clock.

With Calendar, Barometer, Thermometer and Spirit Level, oak or walnut, 23¾ in. high, 13 in. wide, 8-day, half hour strike, a very desirable and reliable timekeeper. Walnut or oak, each 2.60

"ARION" OFFICE OR HALL REGULATOR

(Waterbury Clock Co.)

12 in. dial octagon drop. Guaranteed standard time Solid oak only. High gloss polish. Fancy veneer front. Warranted by the manufacturer. 27 in. high.

No. 15 8 day time 2.60

No. 16 8 day time with calendar 2.95

No. 17. 8 day time strike wire bell 3.25

No. 18, 8 day time strike calendar 3.55

STANDARD REGULATORS.

Good, reliable timekeepers, for halls, offices, stores, shops, etc., etc. Each clock guaranteed.

Springfield. Maywood.

Springfield Regulator. (Waterbury.) Very handsome designed case of solid oak Fine gloss polish, ornamented top and bottom. Hand carved. Guaranteed to be extra fine accurate timekeeper, 8 in. dial, 39½ in. high, 16½ wide.

No 20 8 day time 4.00
No 21 8 day time calendar 4 25
No 8 day time strike 4.75
No. 33. 8 day time strike calendar 5.00

Maywood, Regulator. New Haven). Hand carved in very neat design. 8 in. dial, guaranteed absolutely accurate timekeeper. Suitable for large offices, factories or shops. 43½ in. high, 17 in. wide. Fine gloss finish.

No. 26. 8 day time. Each 5.00
No. 27. 8 day time calendar 5.50
No. 28. 8 day time and strike 5.90

Novelty Gold Clocks for Specialty Dealers.

Parma Clock. Ormolu gold plated, 2 in. ivory finished dial, plain glass, gilt center, height 6 in., width 4¾ in. One Day (32 hours)..... .90

Regio Clock. Ormolu gold plated, 2-inch ivory finished dial, plain glass, gilt center, height 6⅝ in., width 4⅝ in. One Day (32 hours)..... .90

"VOLTAIRE" Ornamental Clock and Figure

The "Voltaire" is a heavy cast bronze clock and figure, in a very artistic pattern, ornamented with beautiful scroll and floral designs relieved by a landscape scenery. The base is 14¾ in. long on which at one end in sitting posture is cast statuette figure of "Voltaire"; height of clock 17½ in., with beautiful 4½ in. ivory dial and center Rococo cast gilt sash and bezel, with bevel glass. 8 day hair strike on gong. This is the Waterbury Clock Co.'s product. The movement is made with the famous Graham Escapement. It is of unusual appearance in style and in durability and finish equal to the French made clocks finished in bronze or gold plate.

Price, in rich gold finish ..... Each 8.75
Price, in rich Japanese bronze..... Each 7.50

The "Star Actor" a massive clock.

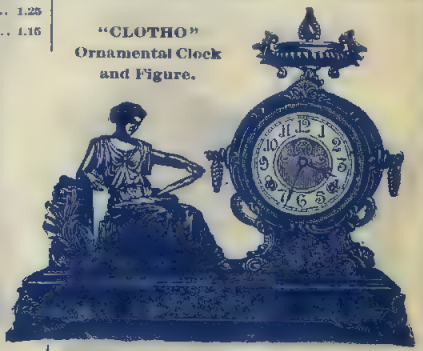
THE "STAR ACTOR" GOLD CLOCK.

Guaranteed 24 karat gold plate, will not tarnish; 11 inches high and 9 inches wide, with 32-hour "Gilbert" movement. Highly ornamental artistic case cast of heavy bronze metal. A phenomenal seller with specialty dealers. Regular wholesale price $2.25. Note the big saving you make at our price.

No. 250. Gold.... 1.25

No. 255. Bronze.. 1.15

"CLOTHO" Ornamental Clock and Figure.



THE "DUTCH" FLEMISH OAK CLOCK.

No. 1028.

Serpentine.

No. 1028. "The Dutch" Clock. Oak frame, dark finish, 2 in. ivory finished dial, beveled glass, gold plated centerband, height 11¾ in., width 7 in. 32-hour movement 1.45

Serpentine Clock. (New Haven). Ormolu gold plated, beautifully finished, 10¼ in high 6⅜ in. wide, 3 in. dial with fancy sash. On top is perfectly executed Greek art statuette or figure with a scroll. 8-day time. Each 7.75

The "Clotho" Clock and Figure is strictly a high grade clock of artistic design, very ornamental in appearance, made solid of heavy cast with a beautiful art figure of Clotho, length of base 20 in. visible escapement 6 inch Porcelain dial. French sash with bevel glass. 8 day half hour strike with Cathedral gong. Top of clock is ornamented Greek lamp design handles on each side of clock. Everything about this clock in general finish construction and appearance suggest a high price article such as would sell for $40.00 or $50.00. The goods are positively guaranteed in every particular. Made by the New Haven Clock Co., whose goods are thoroughly reliable in every way. This clock is especially adapted to installment men or auctioneers, as well as high class jewelers; rich deep bronze finish, also can be furnished in Ormolu gold.

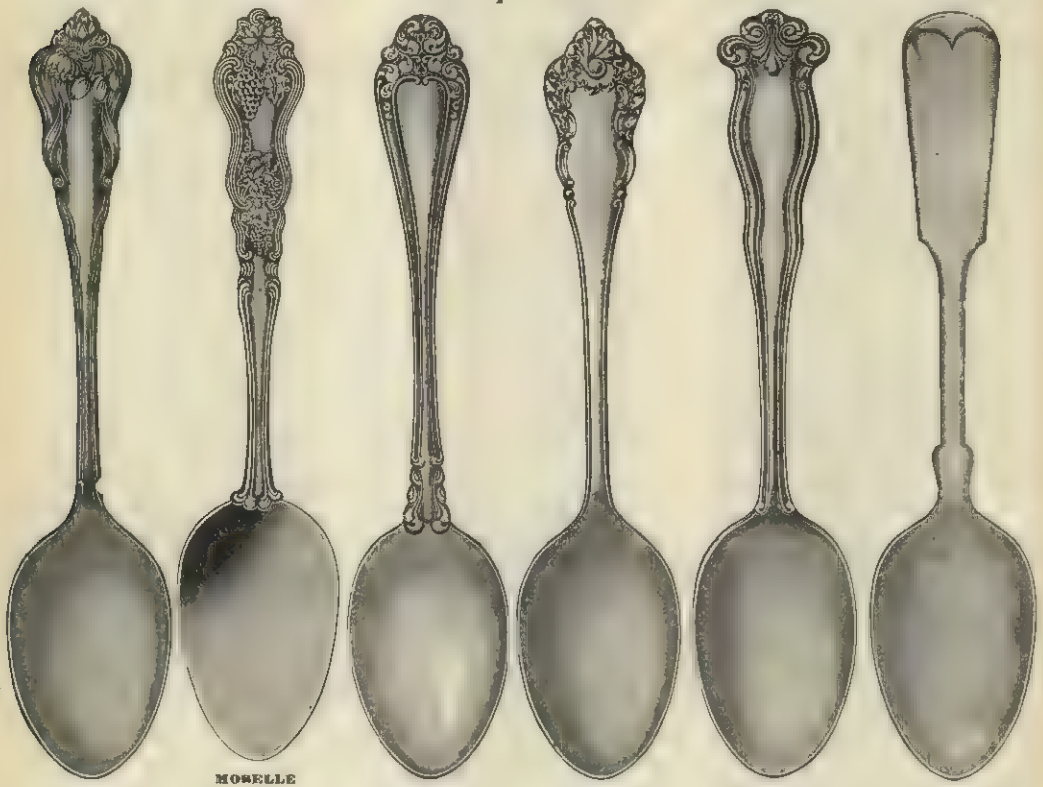
Price, each 13.75

"WORLD BRAND" FLAT WARE

"WORLD BRAND" THE AMERICAN SILVER CO.

The best quality of goods on the market. Highest grade and most artistic designs, on 18% nickel base. The 6-ounce quality is plated 6 ounces of silver to the gross of tablespoons, and all other articles in proportion. Read guarantee herewith both sides.

Prices per Dozen.



NENUPHAR PATTERN.

French gray finish.

Tea Spoons.

No.		Doz.
2650	6-oz. plate	$4 60
2651	14-oz. plate	6 25

Dessert Spoons.

2653	6-oz. plate	$ 8 20
2658	14-oz. plate	10 60

Table Spoons.

2654	6-oz. plate	$ 9 15
2655	14-oz. plate	12 50

Dessert Forks.

2656	6-oz. plate	$ 8 20
2657	14-oz. plate	10 60

Medium Forks.

2658	6-oz. plate	$ 9 15
2659	14-oz. plate	12 50

Butter Knives. (Bent.)

2660	6-oz. plate	$ 8 65
2661	14-oz. plate	12 50

Sugar Shells.

2662	6-oz. plate	$ 8 65
2663	14-oz. plate	10 60

MOSELLE PATTERN.

French gray finish.

Tea Spoons.

No.		Doz.
2664	6-oz. plate	$4 60
2665	14-oz. plate	6 25

Dessert Spoons.

2666	6-oz. plate	$ 8 20
2667	14-oz. plate	10 60

Table Spoons.

2668	6-oz. plate	$ 9 15
2669	14-oz. plate	12 50

Dessert Forks.

2670	6-oz. plate	$ 8 20
2671	14-oz. plate	10 60

Medium Forks.

2672	6-oz. plate	$ 9 15
2673	14-oz. plate	12 50

Butter Knives. (Bent.)

2674	6-oz. plate	$ 8 65
2675	14-oz. plate	12 50

Sugar Shells.

2676	6-oz. plate	$ 8 65
2677	14-oz. plate	10 60

OREGON PATTERN.

Tea Spoons.

No.		Doz.
2678	6-oz. plate	$4 60
2679	14-oz. plate	6 25

Dessert Spoons.

2680	6-oz. plate	$ 8 20
2681	14-oz. plate	10 60

Table Spoons.

2682	6-oz. plate	$ 9 15
2683	14-oz. plate	12 50

Dessert Forks.

2684	6-oz. plate	$ 8 20
2685	14-oz. plate	10 60

Medium Forks.

2686	6-oz. plate	$ 9 15
2687	14-oz. plate	12 50

Butter Knives. (Bent.)

2688	6-oz. plate	$ 8 65
2689	14-oz. plate	12 50

Sugar Shells.

2690	6-oz. plate	$ 8 65
2691	14-oz. plate	10 60

LAURANCE PATTERN.

Tea Spoons.

No.		Doz.
2692	6-oz. plate	$4 60
2693	14-oz. plate	6 25

Dessert Spoons.

2694	6-oz. plate	$ 8 20
2695	14-oz. plate	10 60

Table Spoons.

2696	6-oz. plate	$ 9 15
2697	14-oz. plate	12 50

Dessert Forks.

2698	6-oz. plate	$ 8 20
2699	14-oz. plate	10 60

Medium Forks.

2700	6-oz. plate	$ 9 15
2701	14-oz. plate	12 50

Butter Knives. (Bent.)

2702	6-oz. plate	$ 8 65
2703	14-oz. plate	12 50

Sugar Shells.

2704	6-oz. plate	$ 8 65
2705	14-oz. plate	10 60

PONCE DE LEON PATTERN.

Tea Spoons.

No.		Doz.
2706	6-oz. plate	$4 60
2707	14-oz. plate	6 25

Dessert Spoons.

2708	6-oz. plate	$ 8 20
2709	14-oz. plate	10 60

Table Spoons.

2710	6-oz. plate	$ 9 15
2711	14-oz. plate	12 50

Dessert Forks.

2712	6-oz. plate	$ 8 20
2713	14-oz. plate	10 60

Medium Forks.

2714	6-oz. plate	$ 9 15
2715	14-oz. plate	12 50

Butter Knives. (Bent.)

2716	6-oz. plate	$ 8 65
2717	14-oz. plate	12 50

Sugar Shells.

2718	6-oz. plate	$ 8 65
2719	14-oz. plate	10 60

TIPPED PATTERN.

Tea Spoons.

No.		Doz.
2720	6-oz. plate	$4 10
2721	14-oz. plate	5 80

Dessert Spoons.

2722	6-oz. plate	$7 20
2723	14-oz. plate	9 60

Table Spoons.

2724	6-oz. plate	$ 8 20
2725	14-oz. plate	11 50

Dessert Forks.

2726	6-oz. plate	$7 20
2727	14-oz. plate	9 60

Medium Forks.

2728	6-oz. plate	$ 8 20
2729	14-oz. plate	11 50

Butter Knives.

2730	6-oz. plate	$ 7 70
2731	14-oz. plate	11 50

Sugar Shells.

2732	6-oz. plate	$7 70
2733	14-oz. plate	9 60

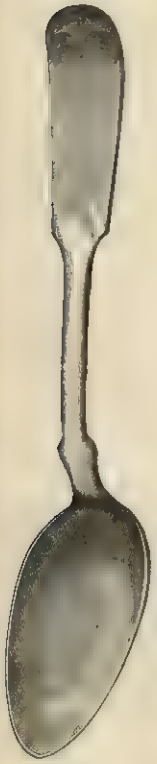
The above prices are subject to the regular discount.

HOLMES & EDWARDS
STERLING INLAID

HOLMES & EDWARDS' HIGH GRADE SILVER PLATED FLATWARE.

For style, finish and durability this line has no superior.

This brand has been on the market for twenty years, and is reliable. Superior quality flatware plated on full standard plate 18% nickel silver blanks. Prices per dozen.



TIPPED PATTERN

No.	Tea Spoons.	Doz.
2536	A1 plate.	$ 4 65
2537	XII "	5 45
2538	Triple "	6 50
	Dessert Spoons.	
2539	A1 plate	$ 8 15
2540	XII "	9 20
2541	Triple "	10 80
	Table Spoons.	
2542	A1 plate	$ 9 25
2543	XII "	10 80
2544	Triple "	13 00
	Dessert Forks	
2545	A1 plate	$ 8 15
2546	XII "	9 20
2547	Triple "	10 80
	Medium Forks	
2548	A1 plate	$ 9 25
2549	XII "	10 80
2550	Triple "	13 00
	Twist Butters.	
2551	A1 plate.	$10 80
2552	Triple "	15 15
	Sugar Shells.	
2553	A1 plate.	$ 8 65
2554	Triple "	10 80

SHELL PATTERN.

No.	Tea Spoons.	Doz.
2555	A1 plate.	$ 4 65
2556	XII "	5 45
2557	Triple "	6 50
	Dessert Spoons.	
2558	A1 plate	$ 8 15
2559	XII "	9 20
2560	Triple "	10 80
	Table Spoons.	
2561	A1 plate.	$ 9 25
2562	XII "	10 80
2563	Triple "	13 00
	Dessert Forks.	
2564	A1 plate	$ 8 15
2565	XII "	9 20
2566	Triple "	10 80
	Medium Forks	
2567	A1 plate.	$ 9 25
2568	XII "	10 80
2569	Triple "	13 00
	Twist Butters.	
2570	A1 plate.	$10 80
2571	Triple "	15 15
	Sugar Shells.	
2572	A1 plate	$ 8 65
2573	Triple "	10 80

ARDEN PATTERN.

No.	Tea Spoons.	Doz.
2574	A1 plate.	$ 4 60
2575	XII "	5 30
2576	Triple "	6 25
	Dessert Spoons.	
2577	A1 plate	$ 8 20
2578	XII "	9 15
2579	Triple "	10 60
	Table Spoons	
2580	A1 plate	$ 9 15
2581	XII "	10 60
2582	Triple "	12 50
	Dessert Forks.	
2583	A1 plate	$ 8 20
2584	XII "	9 15
2585	Triple "	10 60
	Medium Forks.	
2586	A1 plate.	$ 9 15
2587	XII "	10 60
2588	Triple "	12 50
	Twist Butters.	
2589	A1 plate	$10 10
2590	Triple "	13 95
	Sugar Shells.	
2591	A1 plate.	$ 8 65
2592	Triple "	10 60

PEARL PATTERN.

No.	Tea Spoons.	Doz.
2593	A1 plate.	$ 4 60
2594	XII "	5 30
2595	Triple "	6 25
	Dessert Spoons.	
2596	A1 plate	$ 8 20
2597	XII "	9 15
2598	Triple "	10 60
	Table Spoons	
2599	A1 plate.	$ 9 15
2600	XII "	10 60
2601	Triple "	12 50
	Dessert Forks.	
2602	A1 plate	$ 8 20
2603	XII "	9 15
2604	Triple "	10 60
	Medium Forks.	
2605	A1 plate	$ 9 15
2606	XII "	10 60
2607	Triple "	12 50
	Twist Butters.	
2608	A1 plate	$10 10
2609	Triple "	13 95
	Sugar Shells.	
2610	A1 plate.	$ 8 65
2611	Triple "	10 60

ORIENT FRENCH GRAY PATTERN.

No.	Tea Spoons.	Doz.
2612	A1 plate	$ 5 15
2613	XII "	6 00
2614	Triple "	7 05
	Dessert Spoons.	
2615	A1 plate.	$ 9 20
2616	XII "	10 30
2617	Triple "	11 90
	Table Spoons.	
2618	A1 plate	$10 30
2619	XII "	11 95
2620	Triple "	14 10
	Dessert Forks.	
2621	A1 plate.	$ 9 20
2622	XII "	10 30
2623	Triple "	11 90
	Medium Forks.	
2624	A1 plate.	$10 30
2625	XII "	11 95
2626	Triple "	14 10
	Twist Butters.	
2627	A1 plate	$11 35
2628	Triple "	15 70
	Sugar Shells.	
2629	A1 plate.	$ 9 75
2630	Triple "	11 90

NASSAU PATTERN.

No.	Tea Spoons.	Doz.
2631	A1 plate.	$ 4 60
2632	XII "	5 30
2633	Triple "	6 25
	Dessert Spoons.	
2634	A1 plate.	$ 8 20
2635	XII "	9 15
2636	Triple "	10 60
	Table Spoons.	
2637	A1 plate.	$ 9 15
2638	XII "	10 60
2639	Triple "	12 50
	Dessert Forks.	
2640	A1 plate	$ 8 20
2641	XII "	9 15
2642	Triple "	10 60
	Medium Forks.	
2643	A1 plate	$ 9 15
2644	XII "	10 60
2645	Triple "	12 50
	Twist Butters.	
2646	A1 plate.	$10 10
2647	Triple "	13 95
	Sugar Shells.	
2648	A1 plate.	$ 8 65
2649	Triple "	10 60

The above prices are subject to the regular discount.

Hunting Knives and Daggers

STYLES ESPECIALLY DESIGNED FOR STREET MEN AND KNIFE BOARD MEN—BIG FLASHES

No. 464. Hunting knife, one large 4-in. spear blade, metal handle inlaid with tortoise shell. Pressed bolster with guard corkscrew at back, ring at end. Entire length 9¼ in. Dozen ..... .95

No. 435. Hunters' or Campers' Knife. Closed 4⅝ in.; open, 8½ in. Extra heavy built knife, one heavy 4-in. blade, black finish steel handle, hole in end for suspending, polished bolster; an exceptional knife for this price. Per dozen 1.10

LOCK BACK HUNTING KNIFE.

No. 465. Hunting knife, one large 5-in. clip blade, curved handle, pressed shield and bolster, tapering end, inlaid with colored celluloid, combination brass ring, anchor lock back, pressing the anchor releases the lock and the blade closes. Brightly polished; big flashy value. length 9 in. Dozen. . 1.25

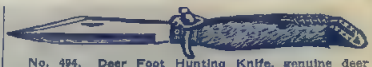
No. 257. Hunting Knife. One razor edge scimitar blade, open 9 inches, best quality high grade steel, polished steel bolster, "Hunter's Own" etched on blade, hole through handle to attach knife to belt, rosewood handle. Dozen 3.35
No. 258. Ebony handle 3.35
No. 269. Stag handle 3.35

No. 256. Hunting Knife. Deer foot shape, two blades, one large scimitar and one small coping; length open 8½ inches, highly polished keen blades, double steel bolster brass lined. German silver shield with corkscrew; large blade locks when opened, closes by pressure on small blade; buffalo horn handle Dozen 6.25
No. 256. Stag handle Dozen 6.25

No. 262. Deer Foot Hunting Knife. Full length, 9¼ inches, genuine deer foot handle, spring lock on 8 inch blade, patent bolster, forming a guard when blade is open. Dozen 7.00

No. 504. Deerfoot Hunting Knife, one large 5 inch blade polished, self locking, brass guard and bolster, polished steel lined, with strong corkscrew Genuine deerfoot handle with natural hair and polished hoof; 8⅝ inches long; best value offered this year. Per dozen 7.50

No. 585. Deer Foot Handle Hunting Knife. Two blades, one 4 in., the other 2½ in., self locking when opened, pressing on small blade releases the spring and the large blade shuts, fancy brass bolsters and brass lined, genuine deer foot handle, fine polished ... screw at back Dozen..... 9.50



No. 494. Deer Foot Hunting Knife, genuine deer foot handle, entire length 10 in., clipper shape razor steel blade, brass lined, brass hoof plate patent spring back with belt and hook, fancy bolster and corkscrew in back. Dozen 10.50
No. 263. As above, larger size, Dozen..... 11.50

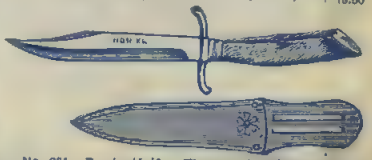
DAGGERS.

Dagger, genuine deer foot handle, nickel ferrule steel double guard, extra heavy, finely polished steel blades; swaged back on both sides. Sharp pointed. One of the best values in a deer foot dagger shown. A big flash and showy quality and really a good article in itself. Each in cloth covered case with nickel metal protected point.
No. 481, 4-in. blade, entire length 8¼ in. Doz.. 3.25
No. 583, 5-in. blade, entire length 9¾ in. Doz.. 3.75
No. 482, 6-in. blade, entire length 10½ in. Doz.. 4.25

No. 584. Dagger. Superior quality finely tempered steel, highly polished on both sides, German silver guard and ferrule, German silver hoof plate, genuine deer foot handle, with nickel trimmed leather sheath with hook for hanging, 5-in. blade. Dozen..... 6.00
No. 528. Dagger. Same quality and style as above, 6-in. blade, in plain imitation leather case. Dozen 7.00

No. 266. Dagger. Full length 10¼ inches, blade 6 inches scimitar shape, razor edge, polished steel, German silver straight guard, riveted stag handle, solid ... sheath, with belt loop. Dozen.. . . . 5.75
No. 2 Dagger, 7 inch blade 4.70

No. 265. Dagger. Full length 8 inches, 4 inch double polished, beveled needle point blade, fancy German silver bolsters and guard, heavy mother of pearl handle 2⅞ inches, with black leather sheath and belt loop. Dozen 10.50



No. 264. Bowie Knife. The genuine English steel, 7 inch blade, clip shape, bevel ground, fancy ferrule, genuine deer foot handle, nickel name plate cap, sole leather sheath with each knife Dozen 11.00

POCKET KNIFE ASSORTMENTS - For Knife Rack Men or Dealers

After catering for many years to the streetmen and outdoor venders, we have gained a certain amount of knowledge as to their methods and ways of doing business, and particularly the kind of goods they handle, and the quality of goods that most appeal to them. In view of this fact, we have gathered from this experience a store of knowledge through which, by putting into practice, we aim that other streetmen and novices not yet in the field should benefit by. Upon this basis our knife assortments are made up, and we can assure you that they will meet with the popular desires in this line, and that they are a success from the word GO everywhere. A trial will convince every-body who is posted on values, and particularly those who have been buying pocket-knives from high-priced sources. They will be amazed at the variety of goods that we offer for these little sums of money.

Our "Starter" Pocket Knife Assortment comprises 100 knives, ranging in price from 35 cents to $3.50 a dozen. The majority of the assortment is made of the staple styles and price goods. They include all the popular shapes and kinds of handles, in 1, 2 and 4 blades. Just the assortment for a man starting into business.
Per assortment 5.00

Our "Top Notch" Knife Assortment consists of 200 pocket knives, ranging in price from 45 cents to $12.00 a dozen. The bulk of this assortment is, of course, made up of the popular low and medium priced goods so as to get the biggest variety possible and it has a sprinkling of the flashy goods which makes it doubly desirable, as it has the appearance, the quality and quantity. All styles of handles, shapes and kinds represented. From 1 to 4 blades, including deerfoots, daggers, pearls, etc.
Per assortment 15 00

Our "Advance" Knife Assortment consists of 150 knives. It is a clever combination of knives, ranging in price from 45 cents to $3.50 a dozen, including all the popular and well known kinds and shapes of handles, in 1, 2, 3 and 4 blades. This gives the dealer a variety that covers pretty much all of the every-day sellers.
Per assortment 10 00

Our Matchless Knife Assortment consists of 300 knives--pocket and jack knives, pearls, daggers, deerfoots, hunting knives in the best of variety of styles and kinds of handles, 1 up to 4 blades inclusive, ranging from 35 cents to $13.50 a dozen. Bulk made up of the popular medium priced goods, with a generous sprinkling of the flashy style. In view of this, this is one of the finest assortments ever offered and big and complete enough for the most exacting knife-boardman or dealer. No item that is desirable as an attraction or a good seller is omitted from this variety.
Per assortment 25 00

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Time cannot leave his marks on the woman who takes care of her complexion with Pompeian Massage Cream. Wrinkles and crow's-feet are driven away, sallowness vanishes, angles are rounded out and double-chins reduced by its use. Thus the clear, fresh complexion, the smooth skin, and the curves of cheek and chin that go with youth, may be retained past middle age by the woman who has found what

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Simply fill in and mail us the coupon and we will send you a large sample, together with our illustrated book on Facial Massage, an invaluable guide for the proper care of the skin.

"I DON'T WANT NO IMITATION MAN" the latest metropolitan song success, complete words and music in standard form sent upon receipt of 6 cents in stamps.

We prefer you to buy of your dealer whenever possible, but do not accept a substitute for Pompeian under any circumstances. If your dealer does not keep it, we will send a 50-cent or $1.00 jar of the cream, postpaid to any part of the world, on receipt of price.

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Pompeian Massage Soap is appreciated by all who are particular in regard to the quality of the soap they use. For sale by all dealers—25c. a cake; box of 3 cakes, 60c.

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The Invincible Chrome Nickel Steel

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1907 **1907**

THE 1907 POPE-TOLEDO will be a sensation and a surprise to all Motordom. No one knows better than the man who drives another car that the Pope-Toledo is the acknowledged car of power, speed and endurance; that the man who owns a Pope-Toledo generally rides with a little more comfort, a little faster, and with less adjusting and at less up-keep expense. Pope-Toledo cars have not only led in power, speed, style and workmanship, but in the point of the number produced.

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Finally, the 1907 car itself, which has been running since June 15th, enables us to say at this time that the Pope-Toledo for 1907 will mark an epoch in the history of the industry, not only in America, but in the world. All we can say further now is that not a bolt, nut, screw or any one of some 5,000 parts, is anything like any car we have ever produced. The engine, transmission, bearings, frame, wheels, axles, brakes, control, design—everything will be new and better. See the 1907 Pope-Toledo for the one car that possesses all the latest and best in automobile construction.

Send us your name now for the advance literature which will be ready shortly.

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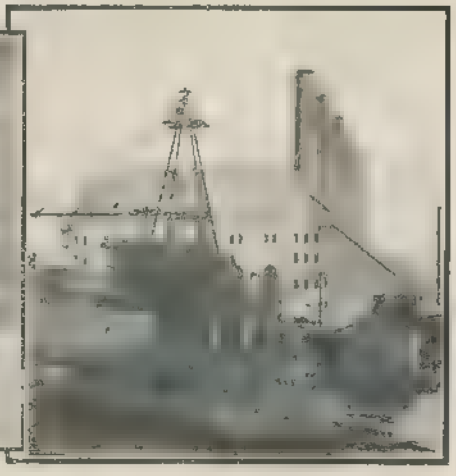
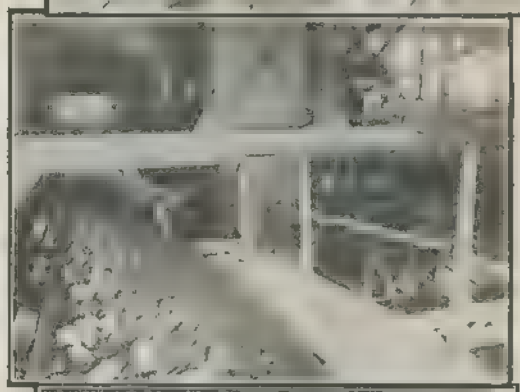
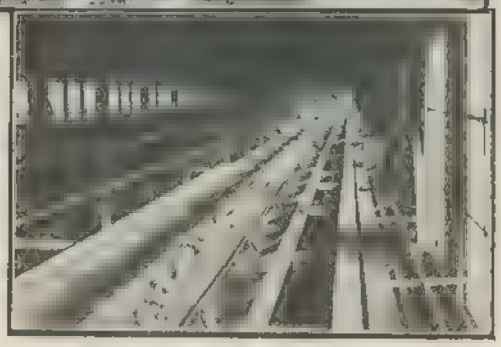
POPE Toledo AUTOMOBILES

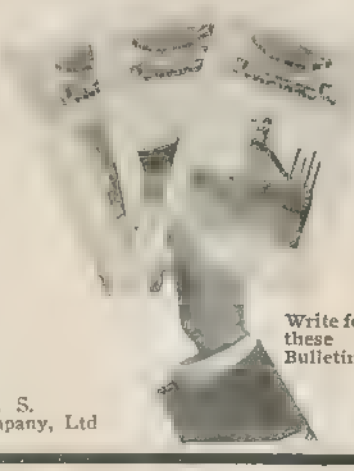






A ROBINS COAL HANDLING EQUIPMENT

THE coal handling system installed in the Interborough R. R. Co.'s power house at 59th Street and the North River by the Robins Conveying Belt Company has proved to be a complete success. Coal is taken from barges by means of an electric hoisting tower, and delivered to a conveyor underneath it by means of chutes. The coal is then carried on this conveyor along the dock, then underneath the street and into the building, where it is delivered to a series of inclined conveyors that carry it in zigzag fashion to the top of the building. Here the coal is delivered to two longitudinal conveyors that discharge it either into bunkers by means of Robins automatic trippers, or to two other conveyors that deliver the coal to bunkers in the far end of the building. The unloading tower, the chute and conveyor under the tower, the inclined conveyor that delivers the coal to the longitudinal conveyors, and one of the longitudinal conveyors are illustrated in the above group.



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San Francisco
The Griffin Company
Alaska Commercial Building

Toronto, Ontario
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Salt Lake City Office
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New Glasgow, N. S.
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The Sheldon School teaches Scientific Salesmanship by correspondence. It teaches you how to develop your natural abilities; how to increase your will-power; how to read human nature as most people read a book; and it teaches all of these things in plain, simple words and apt illustrations.

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trains the mind of any man so that he will be worth more to his employer and to himself. Bookkeepers, stenographers, correspondents, clerks and office men can all get bigger salaries next year by taking The Sheldon Course in Scientific Salesmanship this year.

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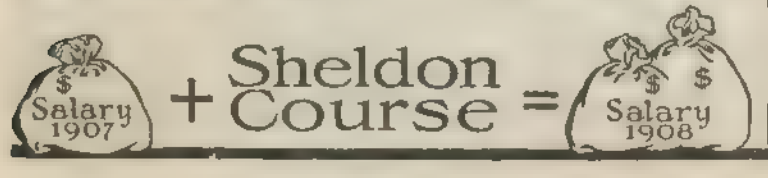

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Please send me at your expense your booklet "The Science of Salesmanship." I am interested specially in the subjects I have checked below.

Salesmanship	Self Development
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Do the wheels slip around without making any progress?

The human engine needs fuel that is rich in the proteids—the element that repairs waste tissue and replenishes the energy expended in work or play—to get the right grip on the business of life. If the wheels are slipping around without taking you forward, put sand on the track by eating

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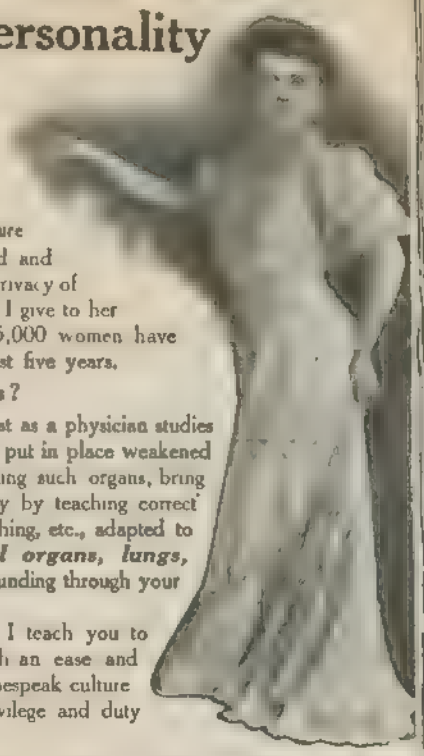

If you will work with me for Vibrant Health and a Good Figure

MANY a woman has surprised her husband and friends by giving 15 minutes a day in the privacy of her own room to special directions which I give to her for the care of health, face and figure. Over 25,000 women have studied themselves under my direction in the past five years.

Are You Tired of Drugs?

I use no drugs. I study each woman's case just as a physician studies it, the only difference being that I strengthen and put in place weakened organs by exercise for nerves and muscles controlling such organs, bring a good circulation of warm blood which I purify by teaching correct breathing and by prescribing the special diet, bathing, etc., adapted to each individual. I strengthen ***all your vital organs, lungs, heart, nerve*** centers, and send your blood bounding through your veins as when a child.

I Develop or Reduce Your Figure to correct proportions. I teach you to stand and to walk with an ease and dignity which at once bespeak culture and refinement. Surely it is every woman's privilege and duty to keep herself attractive and pleasing.

How to Stand and Walk When you request details about my lessons, I send you, **Free**, a booklet showing you how to stand and walk correctly, with a card of correct poise for your dressing table.

Miss Cocroft at Her Desk.

The following are some of the ailments I correct For details about my personal instruction, write me which symptoms apply to your case. If you are suffering from any other ailment write me fully and I will frankly tell you, without charge, if I can help you.

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Thin Bust
Thin Bust
Thin arms
Thin neck
Round shouldered
Superfluous flesh
Prominent hips
Protruding abdomen
Height
Weight
Do you stand correctly
Complexion
Do you walk gracefully
Weakness
Lame back
Dizziness
Irritability
Nervousness
Health bad
Catarrh
Dizziness
Indigestion
Constipation
Liver
Kidneys
Lungs
Heart
Throat
Colds
Rheumatism
Circulation
Blood
Is your health or figure imperfect in any way not mentioned here?
Occupation?
What is your age?
Married or Single?

Give me your full name and address, writing very clearly, please.

Write me TODAY!

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I wish every nervous woman could know what benefit I have derived from your personal culture. I am well [illegible] since I have received exactly 15 lessons. I look ten years younger
My biliousness is entirely relieved
Just think how I have gained since I began with you, from 1[illegible] to 147½ lbs in one year
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My head is clearer, the confused feeling having gone. It is the best money ever spent for myself.
You have made me feel like a new woman. My stomach is strong and I have had no neuralgia for some time

Personal Instructions Write me fully, also letting me know your faults of figure, etc. I will make a personal study of your case and will let you know whether I can help you. Your letter will be held in strict confidence. I never publish letters without special permission, though I can send you hundreds of testimonials from women I have helped, who have given me permission to show their letters.

SUSANNA COCROFT, Dept. 90, 57 Washington St., Chicago

Author of "Growth in Silence," "Character as Expressed in the Body," [illegible]

NOTE. Miss Cocroft, as President of Physical Culture Extension Work in America, needs no further introduction.

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Positively removes Freckles, Sun [illegible] Pimples, Blackheads, Liver Spots and all Skin Blemishes. Malvina Lotion and Jubilol Soap are unequaled when used with Malvina Cream. At all druggists or sent on receipt of price. Malvina Lotion, 50c. Jubilol Soap, 25c. a cake.
Send for testimonials.
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for Thanksgiving Day
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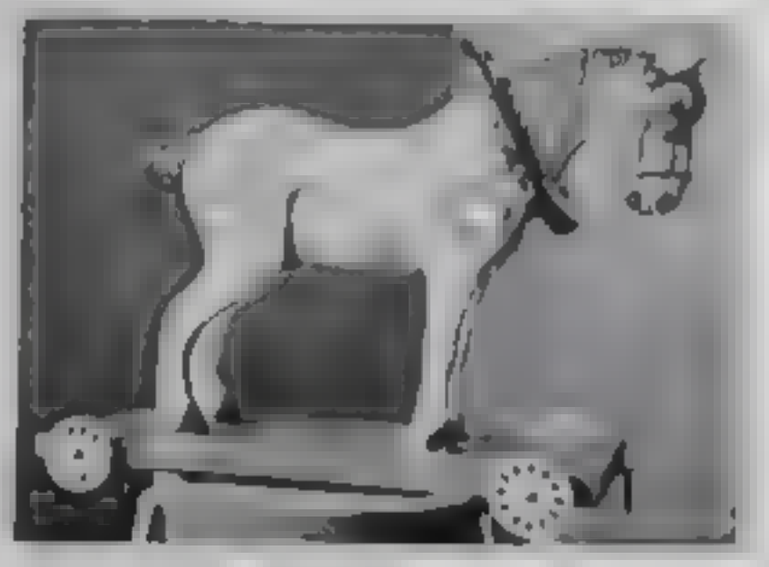

Niedliches Kinderspielzeug aus Holz, hergestellt von Dresdner Spielzeugmachern [illegible]

Dresdner Spielzeug

Aus der Puppenklinik Bertha Rüthlein, Nürnberg.

Aus der Puppenklinik Bertha Rüthlein, Nürnberg.

Aus der Puppenklinik Bertha Rüthlein, Nürnberg.

Aus der Puppenklinik Bertha Rüthlein, Nürnberg.

Aus der Puppenklinik Marie Valerie vom Schmidt.

Aus der Puppenklinik Adolf zu Schwarzenberg-Eisner (Hofbräuhaus Nürnberg).

Aus der Puppenklinik Dreschsel, Dresden.

Aus der Puppenklinik Dreschsel, Dresden.

Fürstliche Puppenfeenden.

Aus der Puppenklinik Bertha Rüthlein, Nürnberg.

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and the reasons why this favorably known savings bank pays

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are graphically told in this new book which we have just published. It will be sent free to any one interested in the subject. Please ask for Book "U".

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Outwardly, the Wayne 30, illustrated above, follows the conventional automobile lines of construction; but that is as far as the similarity goes. The motor, the transmission on the rear axle, drive shaft, clutch—every part, from radiator to gear box, is a Wayne *improvement*.

The Wayne chassis is as finely proportioned and balanced as a watch, and made with the same minutely careful, painstaking attention. Mechanics whose cunning and skill are the result of years of specializing in this line make and assemble this perfect car. In a word, there is but one word—and that is, quality. By sheer force of *quality*, the Wayne stands out head and shoulders above the mass of cars on the market. The name "Wayne" on an automobile marks the same insignia of rank as the word "Sterling" stamped on silver. See to it that the name "Wayne" is on your car.

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For full information write

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Anyone Can Play It

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The ANGELUS PIANO is *always* ready to be played by *anyone.* The pianist can play it from the keyboard in the usual manner, or *you* can play it by means of the incorporated ANGELUS. The ANGELUS PIANO occupies no more space than the ordinary piano, nor is the musical value of the piano itself in the least impaired by the installation of the ANGELUS mechanism. Rather, its musical value is *increased,* in that the piano *need never be idle* except when you wish it so.

The ANGELUS PIANO is the only instrument equipped with the wonderful expression devices, the *Melodant* and *Phrasing Lever.* These patented devices give the ANGELUS PIANO a practical musical value immeasurably greater than any other self-playing instrument in existence, as they provide the performer with the perfect means of transmitting *his own feeling* into the music.

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